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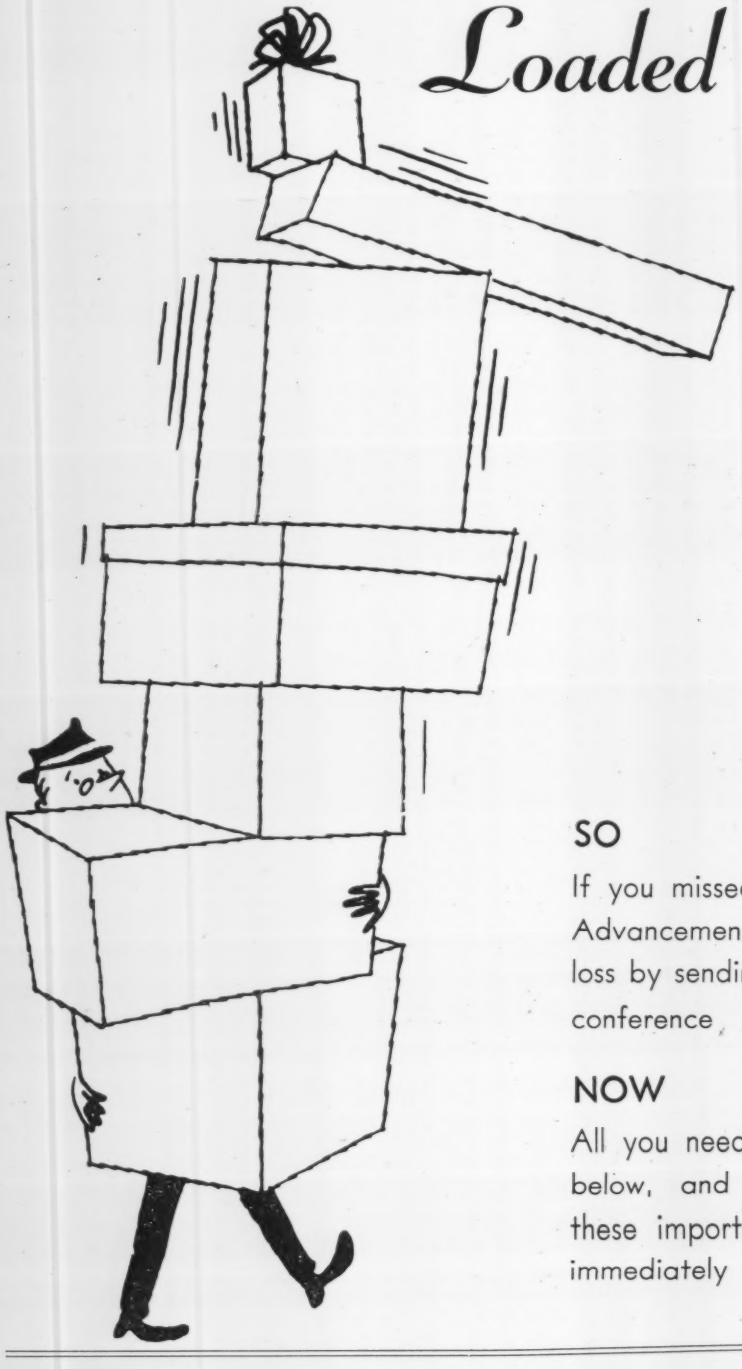

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Overpaid And Incompetent

THE INSTANT any one of us is promoted, he is both overpaid and incompetent. He is overpaid because he can do successfully only parts of his new job.

He is incompetent because the skill, knowledge and experience he has at that time are frequently limited to what he has learned in his previous jobs. Right here are reasons why we see so much "executive development" going on these days. Progressive companies are trying to increase the knowledge of potential men prior to promotion. You may be among these already picked out for advanced training. If you are, my congratulations to you.

But many of us have not yet been selected for special development. Maybe the companies we work in have not yet seen the need for manager development. If that is where we stand, then what? Are we going to wait until "opportunity knocks at our doors?" Or are we planning to do something now to move ahead? We can.

We can add greatly to our own self-development by taking active parts in our S.A.M chapters. They carry on meetings, conferences, roundtables and workshops that every year bring to us both the principles and the tools of advanced management. Skilled men discuss both know-why and know-how. They tell us not only how to manage more skillfully but also how to be managed more correctly.

By exposing ourselves to the many factors in management, we do two things that are helpful to our own progress. First, we will understand better how our efforts fit into the whole of the complex operations we call business and industry. Second, we will acquire up-to-date knowledge that will make us more competent to work successfully in doing our part of that whole.

You and I must "study" all the time to get where we want to be before we reach the end of the short 40 years allotted to us. There just aren't enough boss' daughters to go around. We have no choice except to learn more so we can do our present jobs as well as we should. We must learn still more so as to get those promotions we want.

We have elected to make our livings with our minds. Therefore, broader knowledge is necessary. It follows that we must get more into our minds before we can advance ourselves. Then shouldn't we learn all we can from our fellow S.A.M members and the speakers at our Chapter meetings? There we have brought together a wealth of knowledge available to us for the taking.

Phil Carroll

President

The Impact Of Nuclear Development On Industry

by Dr. Lauchlin M. Currie

Vice President
Union Carbide Nuclear Company
New York

I AM STARTING with the premise that atomic energy will have a major impact on American industry and on all of us as individuals. Perhaps I should get my tenses straight. As a matter of fact my major premise should be: Atomic energy *has had* a major impact —and *will have* even more. So I shall support the first statement and then elaborate on the second as the main part of this paper.

As to the past tense, let me point out how much we have already been affected by the atomic energy program—in ways which you may, perhaps, have overlooked.

First—Financially: We all grumble over Federal Income Taxes. In the Fiscal Year '55, 3% of expenditures by the Federal Government were for AEC! For the Fiscal Year '55 our Federal public debt amounted to approximately $274 billions: AEC (and Manhattan Engineering District) are responsible for 5 to 6% of that! These expenditures are highly inflationary because they result in so few products that can be sold to absorb these funds.

Second—Materials: Have you, in the last 12 to 13 years, had trouble in buying (even at a higher price) any quantities of nickel, fluorine or HF, Zr, Li or Hg—not to mention U? If you had trouble, the Atomic Energy program was probably to blame. Have you had trouble getting deliveries on steels, especially certain grades of stainless, or on special electronic instruments? AEC programs have had an effect.

Third—Personnel: Have you suffered from a shortage of engineers, physicists or even good pipe fitters? Some of these men are included in the more than 130,000 individuals now working full time on Atomic Energy programs. Of this number about 15,000 are classed as scientists and engineers!

Incidentally, AEC installations use about 10% of the total electric energy generated in the U.S.

Fourth: Atomic Energy programs have played a dominant role in international diplomacy and military planning. The entire foreign policy of the USA seems founded on two premises: (1) We have powerful atomic weapons and we will use them if we have to; (2) We have strong supplies of materials and money which we will also use (if we must) in order to hold old friends and allies—and buy new ones!

Military planning, particularly NATO, seems predicated on atomic weapons—and ability to lay them on certain targets. This decision, directly or indirectly, definitely affects our daily living. Though it is true that the A bombs dropped on Hiroshima and Nagasaki caused the deaths of many Japanese, it is the belief of those best informed that American invasion of Honshu and the capture of Tokyo across the plains from Yokohama would have killed even more Japanese—not to mention 100,000 American boys, some of whom might have been your sons or mine.

As a final point, a fifth way in which Atomic Energy has already affected us,

DR. CURRIE is a well known and outstanding speaker on the topic of nuclear development. He has spent the past 30 years in research work for various divisions of the Union Carbide and Carbon Corporation, with which he has been associated since 1925. During World War II he was Associate Director of War Research on the Manhattan Project. He returned to National Carbide in 1945 as Vice President in Charge of Research. In 1955 he became Vice President of the Union Carbide Nuclear Company, a special division set up to integrate Union Carbide and Carbon Corporation's diverse activities in the field of atomic energy. Dr. Currie served as a member of the American Delegation of the United Nations Secretariat at the Geneva "Atoms For Peace" Conference in 1955.

experts tell me, is through radioactive isotopes and special tracing techniques which have already saved more lives than have been destroyed by atomic bombs. In other words, we are well ahead on the balance sheet of lives saved vs atomic bomb fatalities. God-willing, may we keep it so!

Now, where do we stand as to the future of atomic energy programs and their impact on American industry? This is such a broad subject, and American industry will be affected in so many ways (some, perhaps, that will hardly be recognized) that it behooves me to pick some special points as typical. In doing so, I shall use as my special background "The Report of the Panel on the Impact of the Peaceful Uses of Atomic Energy to the Joint Committee on Atomic Energy"—the so-called "McKinney Report". This (and allied reports) frequently give *two* figures—optimistic and pessimistic—for certain estimates; where I use figures I shall attempt to use averages.

Furthermore, I shall follow the example of the McKinney Report and limit most of my predictions to 25 years into the future.

Atomic Power—Electrical and Heat

The world at large, and Japan in particular, was first introduced to atomic energy in the form of the "A bomb". This enormous package of energy was liberated through the fission, or splitting, of the atomic nuclei of uranium (or plutonium), resulting in the actual destruction of matter, which returned to the cosmos as energy.

The current concept of an atomic power plant today is simply that of a controlled fission reaction; somebody has called it "a smoldering bomb". This is not quite fair, however, for the modern atomic power station will be practically incapable of a nuclear explosion. (Coal-fired steam boilers have been known to explode.)

Products of the nuclear reaction include heat, radiation and fission products, or fragments of the original nuclei of the atomic fuel or bomb parts. The utilization, or disposal, of these products represent most of the problems of the nuclear energy field today.

Heat from a reactor must be removed in order to control reactor temperature and to utilize the basic product of the reactor—energy. This energy—generated as thermal energy—can be used simply as heat, or converted to mechanical or electrical energy. Since this conversion is usually of a low order of efficiency (20-40%), much thought has been given to direct conversion of fission energy to electricity. Thus far, the results have not been promising, and electric power from nuclear reactors must still come through a steam or gas turbine cycle.

This may, perhaps, be a good point to mention and then drop—the question of thermonuclear power. Here again the world's first general knowledge came through a weapon—the H-bomb. This bomb, like the A-bomb in that its energy comes from the atomic nuclei, differs in many important respects from the A-bomb. The H-bomb depends upon a *fusion*, rather than a *fission*, of atomic nuclei. It can be almost limitless in size. It can be made with a minimum of radioactive "fall-out".

Thermonuclear power requires a controlled fusion reaction. The process involves the fusion of two extremely light nuclei to form a heavier nucleus, and this process is accompanied by the release of energy. In order to accomplish this fusion it is necessary to provide the light nuclei (hydrogen, deuterium, tritium, etc.) with sufficient energy of motion to overcome natural forces of repulsion and at the same time bring the nuclei in sufficient proximity that fusion can result. This means high pressures, at temperatures of several hundred million degrees. Obviously, no ordinary container would serve under such conditions. Electric or magnetic fields have been considered and tried, altho obviously, too, on a very small scale. It has been questioned as to whether a fusion reaction on a small and rate-controlled scale can ever produce more power than required to maintain the magnetic fields.

The fact remains that our only major thermonuclear reactions occurred only under the conditions of temperature and pressure generated by an A-bomb explosion. Unquestionably, thermonuclear power will eventually be developed, but I doubt if the essential inventions have as yet been made, or the essential engineering work done. Dates of successful, controlled thermonuclear power have varied widely; most experts play safe by predicting 20 to 100 years. Dr. Glenn Seaborg, Nobel Medalist, recently indicated his belief that controlled thermonuclear power is probably still 5-10 years off. He did not estimate when it might have any economic value.

In the interim we'll have to get our increasing requirements for energy largely from fossil fuels or atomic fi sion.

Electrical Power. Growth of electr power is one simple index of the mirac lous growth in American productivi and living standards. Our capability f generating electricity has almost doubl in 6 years; it now stands close to 12 000 MW. Predictions for 1980 give figure of 450,000 MW; 90,000 of whic may be atomic.

Let's ask ourselves: where will t energy come from if we are to have 36 000 MW of electrical generating cap city—non nuclear—in 1980? Assumi that uses of oil, gas and coal will i increase at the same rates—and th there will be enough of each—and star ing with a figure of 115 x 10^6 tons coal for 1954, we get 167 million to for 1960 and 520 million tons for 198 Can we mine and haul that much coal Also, there is the little matter of 325 10^6 additional tons that by 1980 will for purposes other than generating electricity.

LIARS do figure, and figures can l made to lie, but the best informe expert predict that if general and tot power developments are at a minimu and atomic power increases are a maximum, the worst that can happe to the U.S. coal business would be a 60 increase in 25 years: the more like figure is 300%. So, let's not be too bea ish on coal and transportation. If ou economy is to expand we must hav electric power (and heat), and th means that we must mine, transport, an burn fossil fuels. The extent to whic nuclear power arrives within the ne 25 years will represent an easing of ou fuel problems—and give us a welcome supplement to, not a competitor of, foss fuels.

England and the European nation have realized this for some time. En land is exhausting her supplies of ec nomically available coal, and must no import her major supply of fossil fue —coal from U.S., and oil from the Ne East, through the Suez Canal. (This ex plains some of the recent troubles at th Canal.) It also helps explain the UK drive for nuclear power and their recen jubilation when their Calder-Hall un went on steam.

Atomic skies are alight with a daz ling aurora of radiant hopes and visi promise for the abundant future of man kind, but their fulfillment depends on th atom's capacity to generate economic

lectricity. It it fails, the beautiful lights ill go out". (Wash. Atom. Energy Reports—2/5/56).

eat from Nuclear Fission

The three major products of nuclear ssion are, as I have stated, (1) thermal nergy (2) radiant energy and (3) fission products. Thermal energy (heat) epresents roughly 90% of the energy rom a nuclear fission.

This heat can be used, as such, for eating of homes, factory process heating, etc., or converted to electric power or conventional uses. The latter, though nefficient thermodynamically, has the reat advantages of flexibility and transmission. Cost of constructing and maintaining lines (pipes) for distributing ensible heat limit transmission to very oderate distances.

On the other hand, use of direct heat rom a nuclear power plant may prove uite practical in certain cases. At Hanford, Washington, many homes are eated with by-product heat from the arge reactors used for producing plutonium. In Norway, a nuclear steam lant is being built to supply a large aper pulp plant. Such uses will probbly increase in areas where there are eatloads of sufficient size, near to nuear reactors.

Typical examples would be paper ills, petroleum refineries, chemical lants, or perhaps—when BTU's from uclear reactions become cheap enough —the evaporation of sea water to yield hemicals and potable water. This last tep would change the face of our world.

Technology is not yet far enough adanced to permit direct use of nuclear eat in high temperature industries such s cement, glass and smelting.

Transportation — Railroads: Atomic nergy may affect rail transportation in ways: 1) as a means of propulsion in ocomotives; 2) in generating electricity or railway electrification; 3) and hrough increases and changes in freight atterns. I shall speak later about atomic ocomotives. For electrification of railay systems, current from nuclear ower stations has little to add above onventional power plants, and both will ave to show great economic advantage ver diesels if they are to reverse the rend towards dieselization. So let's class hese two ways as of minor importance.

Atomic energy may, however, have an ffect on freight patterns of haulage. We ave already seen, though, that demands or electric power will greatly increase demands for coal transportation. So, even though coal does represent about one-fourth of the ton-miles of railway traffic, it appears likely that the choice of site for new fossil-fueled power plants near the fuel sources (on top of coal mines or gas or oil wells) will have much more effect than will atomic energy.

However, the general expansion of our overall economy, (coupled with diversification of industry, and dispersal of new industrial units) will be aided by atomic energy and, in turn, will markedly benefit railroads.

Atomic Propulsion: Atomic energy has been suggested as the power source for practically every mode of transportation, and work has been done and is still being done in many of these fields. We may mention: Submarines, Surface ships—military and commercial, Airplanes—military and commercial, Railway locomotives and Highway carriers (trucks and autos).

Not inadvertently, I have listed these almost in the order of likelihood of importance in the next 25 years. Some are feasible; some could be economic. None are, as yet, both. One basic fact should be kept in mind—every atomic power unit must have many tons of shielding material (lead, concrete, steel, etc.) and this becomes increasingly disadvantageous as the weight of the mobile unit decreases.

Submarines: The nuclear-powered U.S. Submarine "Nautilus" is now a finished product and the forerunner of many more units in the development of an American nuclear-powered submarine navy.

Surface Ships: Six new nuclear-powered submarines will (undoubtedly) be followed by nuclear-powered surface vessels—airplane carriers, troop transports, tankers, commercial vessels. All of these will be possible long before they are economically practical. Here, again, factors other than actual costs will control.

Airplanes: Practical nuclear engines have been developed for propulsion of military airplanes, and have actually been flown in planes (powered by more conventional engines). It does not take much imagination to see these nuclear engines actually propelling the military planes, like the Martin Seamaster, specially designed for them. It does not take much imagination to see the possibilities of such planes of enormous speed and power, and almost limitless cruising radius.

Railway Locomotives: My imagination (and my crystal ball) fail me when it comes to early expectations of commercial atomic planes, or of nuclear-powered trains or autos. The commercial planes and trains seem possible, but hardly practical (or economical); the nuclear-powered auto is hardly possible (I could be wrong, but I can't imagine them!).

Highway Carriers: We have been asked, of course, about nuclear-propelled motor vehicles. My current opinion is that these are certainly impractical, if not impossible, and I do not expect to have to change this opinion. This is not to say that such units cannot be built, but problems of weight, shielding, capital costs, hazards, etc., put nuclear-power motor vehicles outside the fence of current reasonableness. For example, a nuclear engine to drive a Ford would have to carry about 80,000 lbs. of shielding materials! This makes our thruways reasonably safe from nuclear "hot-rods"!

Uranium Mining and Processing Industries: You may well be asking: "What are the prospects for supplies of fuels for nuclear power developments?"

Well, if we can ever use the deuterium in sea water as the fuel for thermonuclear power we will have, for all practical purposes, limitless supplies. But I've agreed to leave this possibility out of the picture and limit myself to power from nuclear fission. This, in effect, limits us to uranium.

URANIUM occurs in nature in fairly sizeable total quantities, but not in high concentrations, and good ores are scattered and generally low in uranium content. Ores containing 0.1-0.3% U are considered good and in South Africa they work gold mine tailings for as low as 0.02% U. This means about 7 oz. U/ton ore! In the U.S. alone 3 million tons of ore were mined in 1956; probably 6 million by 1958! 3 million tons of 0.2% uranium ore will yield about 5,000 tons of uranium. Of this, only 1 part in 140 (0.7%) is naturally fissionable fuel—U^{235}. Even this small percentage yields us 35 tons of U^{235}, equivalent in energy to about 90 million tons of coal.

But the remaining uranium^{238} can be converted to plutonium, and natural

thorium can be converted to uranium 233, both fissionable. This would give us almost limitless supplies of nuclear fuels.

It is very difficult to estimate how much atomic fuel will be required, in any given period, by the U.S.—or by the whole world. The answers are largely dependent upon the speed with which a nuclear power industry develops. At the Geneva Conference Dr. Jesse C. Johnson, of the AEC, stated that "it may be 1970, or even 1980, before there is a substantial uranium requirement for power purposes". Other experts give different dates, but all agree that the requirements will come. Until they do, the current high and increasing rate of production must be maintained to meet military or development demands, or for government stockpiling. This stockpiling may be absolutely necessary in order to furnish the initial fuel complements for each nuclear power plant. After this start, the annual requirement for most plants will be markedly lower.

Now to consider the other uses of nuclear energy. These uses—more varied and, perhaps, less startling—may ultimately prove of equal or greater importance. Most of these uses are based on the nature and effects of radiation liberated in the nuclear fission reaction or from the radioactive fission products of the reaction. By irradiation, many conventional materials are converted into radioactive isotopes, the multiplicity of whose uses we are just beginning to realize.

We expect these radiations, and these isotopes, to have a marked impact on medicine and public health, on agriculture, food preservation, industry and on plant locations. I can even correct my tenses again and state that they've already affected all of these fields.

Medicine and Public Health. Atomic energy is being used today in medical research, diagnosis, and therapy. Although public attention has been focused on radiation treatment of cancer, widespread availability of new atomic research and diagnostic tools appears to be the most significant contribution of atomic energy to medicine and public health.

The principal social impact of atomic developments in the medical field is expected to be improved health and longer life for the individual, therefore increased productivity. Also, a larger proportion of aged persons for the Nation as a whole.

Agriculture. Peaceful uses of atomic energy in the field of agriculture are a significant addition to the many other modern methods of improving farm technology.

Domestically, these technological improvements will mean increased productivity and lower costs for individual farmers. For the Nation as a whole these higher yields could, if widely achieved, intensify the already grave problem of farm surpluses.

Atomic radiation has already resulted in the breeding of useful new plant varieties. We can hope to develop many more—types adaptable to wider ranges of climate, rain and soil; more resistant to diseases and insects; tailored to mechanized cultivation and harvesting.

A basic application of atomic energy in agriculture is in use of atomic radiation to speed the evolution process. This is an extension of the work which has been going on for three decades, using X-rays to increase genetic mutation rates. The coming of atomic energy means radiation sources of greater and more flexible use in connection with plant breeding. By exposing living plants, insects, viruses, and even animals to man-controlled atomic radiation, it is possible to induce new species and subspecies at a more rapid rate. In one case, it is estimated that 9 years of conventional plant breeding results were accomplished in 18 months. By increasing the total number of such changes, the entire process of natural selection can be speeded. The small percentage of good variations still have to be winnowed from the many bad ones before they can be put to work on the farm. For example, the following accomplishments have already been achieved through the use of radiation:

1. Barley—Dense heads, stiff straw, tall straw, higher yield of grain and straw.
2. Oats — Earliness, higher yield, stem-rust resistance, short stems.
3. Wheat — Stem-rust resistance, higher yield.
4. Corn — Shorter or taller stalks, earlier or later ripening, resistance to lodging.
5. Peanuts — Leaf-spot resistance, higher yield.

We can expect crops better able to prosper in spite of drought or excessive rainfall, early and late frosts, specific nutrient deficient soils, and other regional, climatic, and seasonal variations which have in the past strictly limited the entire character of agriculture throughout the world.

Radioisotopes give new tools to agricultural researchers. These isotopes in elementary or compounded forms behave chemically as nonradioactive forms do, yet emit radiation which can be traced through living organisms with counting instruments. Minute but still identifiable substances, tagged with radioactivity, are introduced into complex systems—soils, plants, or animals—and followed through the dynamic processes of life.

Pittsburgh Chapter Presents Life Membership Award

At its May 15th dinner meeting the S.A.M Pittsburgh Chapter awarded a Life Membership in the Society to William T. Patton, a charter member (1936) of the chapter.

Mr. Patton, one of two Life Members of his chapter, retired from his job with Westinghouse Air Brake on May 1, 1958, after serving with that firm since July 12, 1909.

Life Memberships in the Society for Advancement of Management are currently held by less than 100 members. There are just two requirements for this award: twenty continuous years as a Society member, and being over sixty-five years of age.

Current tracer research ranges from studies of the uptake of fertilizers by growing plants to the digestive and milk-producing processes of cows.

Tracer studies of animals will make possible cheaper feeding and better management. Before radioactive tracers became available, studies of foodstuffs values were often misleading.

Radioactive isotopes and atomic radiation both contribute to new methods of blight and pest control. Tracers permit study of insect life cycles, thus showing us how insects are vulnerable to human control. Radiation has proved directly useful in eliminating certain animal infestations such as the screwworm fly in cattle and trichinosis in hogs. Radiation is helping us develop more virulent plant and animal diseases in laboratories, so we can in turn develop plants and animals able to withstand them.

ALL crops naturally deteriorate in storage. Chemical treatment to slow down deterioration is only partially successful. Atomic radiation can be used to accomplish more complete protection. Radiation of grains and potatoes, for example, has been of demonstrated effectiveness in prolonging storage life.

Industrial Uses. The $1 million worth of radioisotopes now being sold annually by the Commission to industry are making possible savings through process and quality controls estimated at $100 million annually. This important business is growing larger with every new idea. It contrasts sharply with atomic electric power from which few, if any, have so far made money.

Produced as by-products of nuclear reactors, these radioisotopes provide industry with small sources of radiation and tracers. These atomic tools are so cheap, require so little capital investment, permit such prompt returns, and are so free from information control restrictions that their use is expanding rapidly. Radioisotopes are already contributing to increased industrial productivity on a broad front.

In Industry radioisotopes are used to measure wear on tires and on gears and engine parts.

They help to locate leaks in underground pipes, to develop improved lubricants and to survey oil-bearing shales in very deep-drilled holes.

Rays from radioisotopes are used like X-rays to take radiographs of metal castings, etc., and thus reveal any hidden defects. Fifty dollars worth of Co^{60} does the work of $25,000 worth of radium and can be used on up to 8″ of steel. For thinner, or lighter, metals radio-caesium (Ca^{137}) can be used. Several pictures may be made simultaneously, from a single source.

Certain radiation from radioisotopes is very penetrating, though absorbed in varying degrees by different materials. By continually measuring this radiation, it is practical to determine the nature and amount of materials between the radiation source and the detector. Thus beta-rays (from Sr^{90}) are used to measure—continuously and to an accuracy of 10 thousandths of an inch—copper sheeting being rolled at high pressures and at speeds of around 700′/minute. Similar equipment is used in paper, linoleum, rubber and steel industries.

Similarly, Co^{60} sources are used to measure and control levels of liquids under extreme conditions—where temperatures, pressures, or toxicities interfere with ordinary measurements. Accordingly, it is possible to measure levels of molten glass in closed furnaces, or of molten steel under molten slag in blast furnaces.

In chemical analyses, radioisotopes have proved invaluable too. In the oil industry, hydrogen determinations to a precision of 0.02 weight percent can be made in 5 minutes. Vanadium can be detected in micrograms. Drinking water is quickly analyzed. Hydrogen/carbon ratios in hydrocarbons are easily established.

In addition to uses as tracers or as measuring instruments, radioisotopes, used as sources for radiation, promote certain reactions that might otherwise be very difficult to secure. Great new possibilities are opening up for the chemical industry; it has already proved possible to produce new plastics that are much more resistant to heat than the former ones, and this will no doubt greatly extend their possible uses. In the case of one plastic material (polyethylene), irradiation can increase the hardness, tensile strength and density of the product.

Radiation chlorination of benzene takes place rapidly enough to make it commercially attractive. The reaction is presently conducted on a commercial scale using ultraviolet radiation.

These are but a few of the applications of nuclear energy to Industry. Use of radioisotopes and tracer techniques are already recognized and utilized tools of modern Industry. Industry as a whole is just beginning to find out the value of intense radiation in affecting chemical reactions. This field will open fast.

Whether we like it or not, we are entering the atomic age. Whether we are its masters or its victims will depend upon the quality and quantity of the effort we expend in mastering it.

I believe we are on the way to doing it. ■

Know Your 1958-59 National Officers

II — *President*

PHIL CARROLL

PHIL CARROLL began work on the Missouri Pacific railroad in 1911, doing track construction and automatic signal installation during summer vacations until he graduated as an Electrical Engineer from the University of Michigan in 1918. After service in the Army Signal Corps during World War I he entered Westinghouse as a student engineer, later transferring to Time-study. He worked in three Westinghouse plants until 1923.

Mr. Carroll was one of the founders of Dyers Engineers, Inc., of Cleveland. He left that corporation in 1940 to establish his own practice as a Professional Engineer, after personal experiences in over 200 plants which included practical applications of timestudy measurement to wage incentive for direct and indirect labor, budgets, standard costs and product overheads.

A long-time member of S.A.M, Mr. Carroll had held many offices in the Society on a chapter and a national basis. He is also a member of the American Management Association, the American Society of Mechanical Engineers, National Society of Professional Engineers, American Institute of Industrial Engineers and the National Office Management Association.

Mr. Carroll is the author of many articles and books on timestudy and cost control, and is a Contributing Editor of Supervision Magazine **and Consulting Editor for the** Journal of Industrial Engineering.

The Application Of Managerial Controls In Selected Business Firms

by Raymond J. Ziegler
Associate Professor of Management
State College of Washington
Pullman, Washington

ALTHOUGH our body of knowledge on the subject of control has increased considerably in the 20th century, its application is still uneven. Many firms do not know when things are out of control or how to get them back under control. The solution may lie in the discovery of a General Theory of Control which would enable a firm to arrive at nearly correct solutions to its basic control problems. Until such a general theory is evolved, however, it will be necessary to periodically survey representative business firms to see what progress is being made.

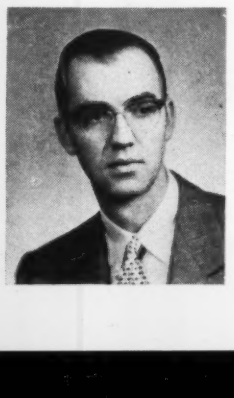
One such survey was made recently in the Milwaukee-Chicago area by this writer, and the findings thereof are presented in this paper. Sixty-three companies were selected from the categories of manufacturers, retailers, wholesalers and services. These companies were logical for this study because they were businesses of all sizes and types, firms which were representative of our nation's business activity, as well as of Milwaukee-Chicago commerce.

All information in the survey was gathered in personal interviews from representatives of top and middle management. These individuals were not only ultimately responsible for all business activity, but they were in a position of authority to do something about controlling it. The majority of the executives interviewed held ranks such as president, vice-president, secretary, treasurer and controller. From the information obtained from interviewees, the writer has attempted to judge the effectiveness of the firms' means and methods of applying controls within their organizations. The results of the study can be best explained by first considering the basic problem of control.

Controlling is a process or function of management for assuring that performance corresponds to plans. Planning is therefore necessary for controlling. Furthermore, plans must be based on standards, which are the *sine qua non* of controls. It is application of standards contained in the plans that makes possible the control of business activities. Our control problem is, therefore, comparing activities of the surveyed business institutions with adopted standards in order to determine whether or not they applied standards developed from their internal planning or borrowed from outside sources, to check or control their operations.

To the extent that plans or the organization for effectuating them are lacking, the process of control is negligible or nonexistent. The value of controls, assuming good planning and organization, depends on two things—the presence of acceptable standards, and their use by competent executives for control purposes. Final use of controls exists in the remedial action taken for getting and keeping various managerial functions "under control"—or corresponding to standards.

Our chief question, by and large, is a determination of the extent to which controls are exercised by the companies surveyed in the Milwaukee-Chicago



PROFESSOR ZIEGLER joined the State College of Washington in 1955. He has taught also at Marquette University and at the Universities of North Dakota, Florida, Omaha and Toledo. He has been Consultant to various Ohio business firms, including Libbey-Owens-Ford Glass Company and Kuehmanns' Foods Inc. He has also been Manager of the Nordmann Roofing Corporation of Toledo.

area. A further observation may be attempted by comparing their use of controls to what is known from managerial literature as to the use of controls in general.

Specific applications as to the first of these questions were found in many instances. From the summary of these findings we are led to several inescapable conclusions:

1. *Planning* on a broad basis among the surveyed companies is far from acceptable when compared to the recognized principles and practices—at least for the majority of their members.
2. *Organization* for effective planning is, on the average, below acceptable standards. This conclusion necessarily follows a situation involving unsatisfactory planning.
3. *Standards* are for the most part, based on hit-or-miss foundations representing personal executive experience. There is little evidence, except among the large firms, that standards were scientifically determined.
4. *Control* applications are too often weakened, or worse, by being assigned to executives who are responsible for the activities they are asked to control. This questionable policy can lead only to subjective controls in most cases.

COMPARING control methods in the surveyed portion of the Milwaukee-Chicago area with the country as a whole (which is actually not a specified inquiry in this study) requires reference to that managerial literature found chiefly in professional magazines. There is a well-established conclusion, based on many national surveys, that American business in general is lagging behind the accepted techniques and principles as they are found in the textbooks. This general observation is particularly applicable to the managerial field of controls. In the area under study there has been comparatively little advance in control techniques beyond departmental or activity functions, even among the large companies.

One pertinent and clear conclusion derived from the Milwaukee-Chicago study is that none of the companies has made any attempt to set up a central control section. Such an advanced control technique would, of course, be applicable only to large concerns, but the interviews show that they have not even considered it, even if, indeed, they have any knowledge of its existence. The central control unit helps insure uniformity of control throughout a large company's departments and divisions. Furthermore, and probably more important, it tends to make the controls more objective than they would be otherwise.

The chief tools of control are methods, procedures, systems, statistics, records, reports and standards. It is this writer's opinion that the generally accepted tools of control are insufficiently used among the companies included in the study. Effective controls are impossible without adequate records, which form the basis for good reporting. It must be realized, also, that a plethora of unsatisfactory records and reports can do more harm than good, besides being unnecessarily expensive. Periodic weeding by trained specialists has been found to be a necessary step leading to helpful control records and reports. The surveyed concerns showed, on the average, a woeful weakness in this respect.

Similar observations may be made about standards. They must be flexible and subjected to changing conditions if they serve their purpose as helpful tools for control. Along this same line, there is no doubt but that controls, assuming their use, are as good as the standards on which they are based.

One authority covered the essentials for control in a thorough fashion when he listed them as:[1]

Definite objectives
Suitable organization
Prepared programs
Established policies
Adequate procedures
Budgeted funds
Trained personnel
Properly placed personnel
Progress inspections
Measuring standards
Regular and special reports

The writer concluded from numerous observations throughout the study that the use of many of these essentials were prominent in their breach among the Milwaukee-Chicago companies, especially with the small and medium-sized concerns.

When this study was first undertaken, there appeared a possibility that the 63 companies dealt with would be effectively controlled in the manner outlined in the standard management textbooks. The results of the study do not lead to anything like uniformity of control techniques. A significant number of firms expressed little knowledge about any principles of control. Furthermore, they were apparently satisfied to continue their management under the then existing conditions. In those concerns where executives compared their results to a standard set up for the measurement of expected accomplishment, the nature of the controls was dictated largely by the requirements of the individual organization, often failing to conform with any general plan.

Organization. Effective control of their organizations was the most difficult problem faced by the 63 companies. Of the 48 firms possessing a future plan, most of which were tailored to their specific needs, plant expansion was the most common. The lack of a future control plan covering this field, as reported by 15 concerns, resulted from the fact that their top-executives were too preoccupied with matters of current concern to concentrate on the future needs of their business.

SEVENTEEN businessses had no procedure for organizational planning, so had no opportunity for controlling in this field. There was also no optimum period for the review of an organization plan, and 13 concerns had no procedure for matching results with plans.

Organizational effectiveness was impaired in 17 firms because they had no method for controlling the number of subordinates reporting to one executive. Thirty-one firms had no method for avoiding too-finely divided functions.

No general plan for aiding in the development of company loyalty was discovered nor was any control technique set up or operated to aid the many concerns faced with an accumulation of miscellaneous and unrelated activities under one executive. The method of adjusting the duties and responsibilities of an executive position to the individual varied from one firm to another. In general, the methods were weak, providing very little control relation between assigned tasks and actual activities performed.

Last but not least, decentralization of operations became a problem, and the chief executive had to determine the degree of decision-making among the newly decentralized units.

The lack of method to relieve executives of unnecessary and time-consuming administrative detail was also a very serious problem in the surveyed companies.

Policies. More than 10 per cent of the concerns had no procedure for policy determination, while another

[1] *Henry G. Hodges,* Management—Principles, Practices, Problems (*Boston*: *Houghton Mifflin Company,* 1956), *pp.* 166-167.

group had no type of check on compliance with and interpretation of company policies. Lack of effective policy control was present since these firms failed to check their operations in terms of results.

Appropriations and Disbursements. The analysis of appropriations and disbursements did not uncover any general plan of effective control. The great enumeration of responsible parties and the individuality of numerous reviews and checks led clearly to such an observation. It can be stated, however, that the accounting department and the board of directors were chiefly responsible for the control of capital, professional, and external contract activities, and that the two most troublesome control areas were maintenance and professional services.

Industrial Relations. The field of industrial relations was complicated by the fact that slightly more than 25 per cent of the firms made no mention of the prime factor in the determination of wage levels for the entire plant or firm. It is only good business to have some knowledge of wage-determining factors so that personnel requirements can be met.

Operations. Next to organization, operations were the second most troublesome area to control. Six functions of sound operations were neglected by a number of the surveyed firms.

Two of the 6 neglected functions concerned products. Slightly more than 10 per cent of the firms had no principal means for determining and changing the line of products and slightly less than 10 per cent had no principal method by which the standard of quality of the product was determined.

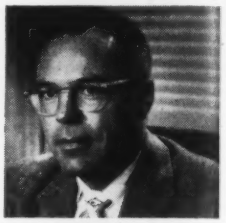
In more than 10 per cent of the firms no one was assigned the authority for price policies and practices.

Three neglected functions concerned market areas and channels. Ten per cent named no party of prime authority for entering new market areas or withdrawing from existing areas; slightly more than 10 per cent failed to disclose the party deciding on the location and extent of warehouses and other market service facilities; and about 10 per cent failed to name the party responsible for the determination of the channels and methods of distribution.

Company Manual. One of the principal management tools utilized to measure and control performance in the 63 companies was the company manual. Its use was by no means universal and there were too few examples of detailed and thorough organization manuals.

The Future. Sometime in the future we may see enlightened management reduce the size of our plants to several thousand men. Henry Ford II held the opinion that general management was most effective in a unit employing between 2,250 and 2,500 men. For example, of the 4 largest surveyed organizations, which possessed 5 to 10 times as many employees, 2 were effectively controlled, however, 2 found centralized control with decentralized responsibilities very difficult to achieve. It is well known that as firm size increases, the relative importance of managerial ability increases and that of technical ability declines. In middle-sized companies both factors tend to be of somewhat equal importance. Barring a reduction of the size of the plant, large firms in the future will probably have their home offices functioning solely as management consultants who advise decentralized producing, marketing and finance decision makers. Small firms may also have outside consultants to help in organizing and introducing controls. ■

What Is S.A.M Against?



by Hugo W. Druehl
President
Arrowhead and Puritas Waters, Inc.
Los Angeles

A FRIEND recently said, "This S.A.M you talk about . . . what is it against?" The first reaction was to quickly set the questioner right by saying, "S.A.M isn't *against* anything. It is *for* individual self-improvement in management practice."

But perhaps this answer to the question is not entirely correct. Maybe a searching look within will show that there are things S.A.M members are against, or should be against. Over the centuries, many dynamic and progressive groups have been formed and have found their purpose because their membership has been *against* something. In fact, some of the noblest institutions of our civilization have been founded by people who have associated themselves together to fight against a concept or activity to which they have been in opposition.

This, in a sense, is, or can be, true of the advancement of management. The member of S.A.M is *against* unscientific management; he is *against* backward thought processes applied to business problems; and he is against a spirit of complacency in facing the business challenges of today. It is in this spirit of discontent that our Society is helping in the advancement of management. Monthly meetings, seminars, work-shops and conferences point-up the issues in the relentless struggle to find better ways of managing our business enterprises. The extent of our real opposition to the unsound and to the unproductive in business and industry gives a clear signal as to the direction Society activities should take.

Opposition by itself, however, is not a sufficient foundation for our program of action and for self-improvement. It is the development of positive, forward-looking solutions to the concepts we oppose that gives strength to the S.A.M program. We are not satisfied to merely view with alarm the problems we face or the practices we oppose.

In so studying the business problems and publicly presenting their solutions, the Society for Advancement of Management performs a high public service that goes beyond the immediate goal of self-improvement. We not only improve ourselves, but make available to others the results of our studies and research.

There is a great challenge facing the Chapter officers and members in fulfilling this dual objective of personal improvement and public service. This challenge can be pointed-up by isolating those concepts and practices of the management field to which we take the greatest exception. Finding the solutions for these obstacles to progress brings increased meaning to our participation in S.A.M. ■

Advertising And The Marketing Concept

by Robert E. Kenyon, Jr.,
President
Magazine Publishers Association
New York City

A company's objective today must be to produce goods in kind and quantity that will meet the demands of the market. Therefore, the attention of management must be divided between production capacity and market demand. Here an expert in the field reviews the marketing concept from the viewpoint of the small business as opposed to that of the big company.

THIS will be a discussion on a point-of-view rather than a presentation on techniques or a report on case histories.

The Marketing Concept has become a popular subject for speeches, articles and meetings. it has also become a subject for management conferences and decisions.

At the risk of over-simplifying, let me suggest that The Marketing Concept is the result of *growth*.

Our whole economy has demonstrated a dynamic growth: in business volume, in size and number of industries, in complexity of corporate activities, in population—in short, in every area of our common life.

Manufacturing has grown from a single worker at a simple, hand-powered machine to a single worker at a complex switchboard of an electronic machine.

The Selling of products has grown into such a complicated process, involving many new activities, that the word Selling seems inadequate to describe this big task. The newer word for this vast operation is Marketing. Hence our concern with The Marketing Concept and our recognition of it as another phenomenon of growth.

Peter Drucker in his "The Practice of Management" states the case very well for the broad approach to Marketing. He says that the purpose of any business enterprise is to create a customer. It therefore has only two basic functions, Marketing and Innovation. Marketing, he says, is the distinguishing, the unique function of business. Innovation, in his usage, is manufacturing a better product.

Last year a group of distinguished Marketing leaders joined a Printers' Ink Roundtable to discuss The Marketing Concept. The participants were Charles W. Smith of McKinsey & Co. and President of the American Marketing Association; Eugene Mapel of Barrington Associates; Professor Neil H. Borden of Harvard; Dr. Henry Bund of The Research Institute of America; John T. Morris of Schaefer Brewing; John McLaughlin of Kraft Foods.

They agree, I believe, with the Drucker definition. Much of their discussion at the Roundtable concerned the practical application of The Marketing Concept.

Time won't permit me to spell this out and tell you who said what. In due course a digest of this Roundtable will appear in Printers' Ink and you can read about it there. Suffice it for me to hit the high-spots for you now.

Stripped to bare essentials, business consists of making or selling. In the very early days you made what you could and found a buyer for it with not too much difficulty. As production methods improved and more goods were

Prior to his election to the position of President of MPA, Mr. Kenyon had served on the organization's Board since 1954, when he became Publisher of *Printer's Ink*, of which he had been Advertising Director since 1950. Mr. Kenyon's first position in the publishing field was with the Ahrens Publishing Company in Chicago, in 1941. His first business experience was with Lloyd's of London (1931-32). A frequent speaker before advertising and business groups across the country, Mr. Kenyon has a record of making 19 speeches in 15 days when on a tour of West Coast advertising centers.

made, salesmen were employed to locate the buyers. In this period of modern manufacturing demand for goods generally exceeded the supply.

As our productive capacity increased still further, the supply of goods tended to exceed the demand, even though that demand had also increased through higher wages, greater leisure, more wants and desires.

That's when the need became apparent for a greater sales effort backed by more advertising and sales promotion. The attention of business management necessarily shifted from making goods to selling them. Management soon found, however, that Selling was no longer a simple operation. Selling had become Marketing.

A company's objective today must be to produce goods in kind and quantity that will meet the demands of the market. Managements are coming to realize that a Marketing-minded, rather than a production-minded, attitude is the right one to have toward their customers. With this point-of-view management can hope to achieve a profitable balance between productive capacity and market demand.

It might be said that a Marketing executive thinks of the customer first, whereas a Sales executive thinks of the company first.

Another distinction is that the Marketing executive is primarily engaged in planning, whereas a Sales executive is primarily concerned with doing.

SELLING has usually meant getting the order and doing those things which are directly concerned with salesmen and sales management in the development of the greatest possible sales volume. Marketing means the use of all company resources in creating profits through an adequate sale volume.

The best Marketing men are those who have an understanding of the key importance of Marketing in the making of profits. They may be called Sales Directors or Marketing Directors. Titles mean less than an understanding of the strategic importance of Marketing in their company operation.

Marketing is a basic business function. Therefore it occurs in a one-man shop as well as in a billion-dollar corporation. The differences are in degree—though admittedly a great degree. The progress of an industrial giant of today from a backyard factory of yesterday illustrates the growth in size and complexity of both the manufacturing and the Marketing operation. Manufacturing and Marketing are basic to that company, whatever its size.

In a small company, the owner-operator is the maker and the seller. When the company gets bigger, more workers and more salesmen are needed. Then a sales manager. Then advertising and an advertising manager.

In a big company, the man who is responsible for the total Marketing operation may be called the Marketing Vice President.

Growth in business has created another concept which is essential to the proper functioning of modern business, and that is Integration.

The concept of Integration means that all parts of today's complex business enterprises must be co-related, coordinated, integrated so that each part contributes its share to the success of the whole.

Integration occurs all up and down the corporate ladder. The various manufacturing operations must be integrated. The different Marketing activities must be integrated. Advertising, sales promotion, personal selling, research, product design, packaging, public relations—all must be inter-related. These specific activities must be integrated so that the whole Marketing operation effectively makes its contribution to a company's profits.

The way in which the various activities are used to achieve a given Marketing objective has been called the Marketing Mix. One Marketing Mix might include a large amount of Advertising; another might depend more on personal selling; still another might have research as its principal component for the current year.

In companies where Marketing is a particularly vital operation and where the Marketing Mix may change from year to year, the head man could, I suppose, be called the Marketing Mix Master.

Another characteristic of Marketing is that it must be a team operation. The specific activities of Advertising, sales promotion, research, product design, etc. demand executives with experience and knowledge in these areas. This group must work together as a team under the leadership of a Marketing man in order to achieve the goals the company has set. The title of this man is not as important as his function. He could be President, Sales Vice President—or Marketing Vice President. He must be the one to determine what shall be done in the Marketing operation. His knowledge of Advertising, Selling, Marketing techniques must be exceeded only by his skill in human relations because he must see that the Marketing job is done by the people on his team.

A particularly good result of this team operation is greater mutual understanding among those who must work together. Advertising and sales people, for instance, come to have a better grasp of each others' jobs.

The Marketing Concept, therefore, is the result of growth in the size and complexity of business, especially in the selling of products. It is a basic business function, and so must be an ingrained part of management thinking.

While Marketing includes many specific activities designed to create customers, Advertising is a key factor.

Indeed, in this present day economy of tremendous production potential, high earnings and varied desires or wants, Advertising must dominate Marketing.

This reason is, I think, simple.

Our productive capacity is so great that prosperity could be hamstrung if people do not continue to buy and consume, buy and consume.

Personal selling, as I have noted before, is not adequate to this task. Customers must be created in as great a quantity as products are mass-produced. Advertising is the mechanized process by which prospects are created for countless products, converted into customers and kept as steady consumers. Advertising is to Marketing what the machine is to manufacturing.

The Advertising task is complicated today by the new products coming out of new discoveries and processes; by more brands in every product category; by self-service and the consequent need to pre-sell a product before the purchaser even gets to the point of purchase; by the indifferent personal selling in many conventional stores.

IN MEMORIUM

It is with deepest regret that we announce the death of S.A.M National Vice President of Membership, Eugene R. Ruark. In behalf of the members of the Society, Executive Vice President Harold R. Bixler has tendered condolences to Mr. Ruark's widow.

ADVERTISING even complicates its own task because there are more advertisements, more media and so greater difficulty in getting through to the readers' and listeners' minds.

The growth of Advertising is truly remarkable.

In 1945, the total volume was $3 billion.

In 1955, the volume was $9 billion.

In 1956, it will surely top $10 billion.

By 1965, I'd say it could easily reach *25 billion dollars.*

This fantastically greater volume means that Advertising must take on a strategic task in the Marketing operations of our companies. Advertising must mass-produce customers as factories mass-produce products in a growing economy.

I'd like to suggest five basic points to guide Advertising into its decade of greatest impact and value to our welfare.

1. Advertising campaigns and every ad in a campaign should have a specific objective so that the time, talent and money invested in it will be a positive contribution to the overall Marketing objective.

2. Advertising must create customers. Every ad must therefore contain a sales idea that will move people, and so move merchandise. The creative people in Advertising must be trained and encouraged to develop fresh, new ideas that will make their words ring—and make the cash register ring, too!

3. Advertising must be truthful. Copy must tell a good story and tell it straight. Sharp copy blunts an advertiser's reputation.
   Advertisers must not relax their efforts to keep their houses in order. Recent activity on the part of legislation to enact statutes leveled against bait advertisers reflects the public attitude toward questionable advertising practices.
   Rather than resort to new legislative methods, it would seem better that Advertising itself be a more effective policeman with advertisers, agencies and media who lean toward the fast buck instead of Truth in Advertising. The code of ethics established by the many associations in Advertising and Marketing, the Printers' Ink Model Statute in most of the 48 states and the activities of the Better Business Bureaus certainly give us the necessary instruments with which to discipline offensive members.

4. Advertising must be integrated with the Marketing program. Advertising, Selling, sales promotion, research, packaging, pricing—these and all other Marketing activities must be tied together, correlated and integrated so they will all be working smoothly toward their common goal. They should not be pulling in different directions through lack of a master plan or because each executive works out his own destiny. Packaging, for instance, is no longer just a matter of putting a product in a container. If a product is sold in retail stores, the package should be designed to reach out for the buyer from the store shelf. It must also register a distinct sales impression from the magazine page and the TV screen. The design of the package, the kind of illustration, the color used are decisions that must be shared by the entire Marketing team.

5. Advertising should recruit talent for its development. Good people can be found in other areas of a company's operation and in other kinds of work. They should be sought out and sold on making Advertising their career.
   Education in Advertising is getting more attention from all quarters. Universities, colleges and business schools are improving their curricula and enrolling more students. Those who have received such education in Advertising should be brought into the field so they can contribute to its further growth.
   Advertisers, agencies and media are developing on-the-job training courses. People who have received this help should certainly be kept in the field.

May I conclude by quoting three leaders in three widely separated fields.

Paul Mazur, senior partner in the Wall Street firm, Lehman Bros. said in his book, *The Standards We Raise:* "The power of Advertising is one of the great persuasive forces not only in educating men and women to a higher standard of living but also in providing industry with its necessary sales volume and workers with their high wages and purchasing power."

Professor David Potter of Yale, in his book, *People of Plenty*, says that modern Advertising was brought into being by and is peculiarly identified with American abundance. ". . . Advertising now compares with such long standing institutions as the school and the church in the magnitude of its social influence."

In his very stimulating discussion of Advertising as the Institution of Abundance, he points out that "Advertising is not badly needed in an economy of scarcity, because total demand is usually equal to or in excess of total supply, and every producer can normally sell as much as he produces. It is when potential supply outstrips demand—that is, when abundance prevails—that Advertising begins to fulfill a really essential economic function."

HAL STEBBINS, one of America's great copy writers, sums up in a fine piece of copy the place I think that Advertising occupies in The Marketing Concept:

"It's up to us to show what a dynamic force can do in an atomic age:

Let's move products by moving people.

Let's make the truth exciting.

Let's bear in mind that people buy what they want, not what they need; and that our American economy can't keep in high gear unless the nation's products are not only produced but consumed.

Let's create advertising that not only sells but builds integrity and prestige for the company that sponsors it—and, in the process, builds believability in all advertising.

Let's quit apologizing for being in advertising—and for spending money for advertising.

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Advertising is a great force. It is we who are not great enough to use it." ■

made, salesmen were employed to locate the buyers. In this period of modern manufacturing demand for goods generally exceeded the supply.

As our productive capacity increased still further, the supply of goods tended to exceed the demand, even though that demand had also increased through higher wages, greater leisure, more wants and desires.

That's when the need became apparent for a greater sales effort backed by more advertising and sales promotion. The attention of business management necessarily shifted from making goods to selling them. Management soon found, however, that Selling was no longer a simple operation. Selling had become Marketing.

A company's objective today must be to produce goods in kind and quantity that will meet the demands of the market. Managements are coming to realize that a Marketing-minded, rather than a production-minded, attitude is the right one to have toward their customers. With this point-of-view management can hope to achieve a profitable balance between productive capacity and market demand.

It might be said that a Marketing executive thinks of the customer first, whereas a Sales executive thinks of the company first.

Another distinction is that the Marketing executive is primarily engaged in planning, whereas a Sales executive is primarily concerned with doing.

SELLING has usually meant getting the order and doing those things which are directly concerned with salesmen and sales management in the development of the greatest possible sales volume. Marketing means the use of all company resources in creating profits through an adequate sale volume.

The best Marketing men are those who have an understanding of the key importance of Marketing in the making of profits. They may be called Sales Directors or Marketing Directors. Titles mean less than an understanding of the strategic importance of Marketing in their company operation.

Marketing is a basic business function. Therefore it occurs in a one-man shop as well as in a billion-dollar corporation. The differences are in degree—though admittedly a great degree. The progress of an industrial giant of today from a backyard factory of yesterday illustrates the growth in size and complexity of both the manufacturing and the Marketing operation. Manufacturing and Marketing are basic to that company, whatever its size.

In a small company, the owner-operator is the maker and the seller. When the company gets bigger, more workers and more salesmen are needed. Then a sales manager. Then advertising and an advertising manager.

In a big company, the man who is responsible for the total Marketing operation may be called the Marketing Vice President.

Growth in business has created another concept which is essential to the proper functioning of modern business, and that is Integration.

The concept of Integration means that all parts of today's complex business enterprises must be co-related, coordinated, integrated so that each part contributes its share to the success of the whole.

Integration occurs all up and down the corporate ladder. The various manufacturing operations must be integrated. The different Marketing activities must be integrated. Advertising, sales promotion, personal selling, research, product design, packaging, public relations—all must be inter-related. These specific activities must be integrated so that the whole Marketing operation effectively makes its contribution to a company's profits.

The way in which the various activities are used to achieve a given Marketing objective has been called the Marketing Mix. One Marketing Mix might include a large amount of Advertising; another might depend more on personal selling; still another might have research as its principal component for the current year.

In companies where Marketing is a particularly vital operation and where the Marketing Mix may change from year to year, the head man could, I suppose, be called the Marketing Mix Master.

Another characteristic of Marketing is that it must be a team operation. The specific activities of Advertising, sales promotion, research, product design, etc. demand executives with experience and knowledge in these areas. This group must work together as a team under the leadership of a Marketing man in order to achieve the goals the company has set. The title of this man is not as important as his function. He could be President, Sales Vice President—or Marketing Vice President. He must be the one to determine what shall be done in the Marketing operation. His knowledge of Advertising, Selling, Marketing techniques must be exceeded only by his skill in human relations because he must see that the Marketing job is done by the people on his team.

A particularly good result of this team operation is greater mutual understanding among those who must work together. Advertising and sales people, for instance, come to have a better grasp of each others' jobs.

The Marketing Concept, therefore, is the result of growth in the size and complexity of business, especially in the selling of products. It is a basic business function, and so must be an ingrained part of management thinking.

While Marketing includes many specific activities designed to create customers, Advertising is a key factor.

Indeed, in this present day economy of tremendous production potential, high earnings and varied desires or wants, Advertising must dominate Marketing.

This reason is, I think, simple.

Our productive capacity is so great that prosperity could be hamstrung if people do not continue to buy and consume, buy and consume.

Personal selling, as I have noted before, is not adequate to this task. Customers must be created in as great a quantity as products are mass-produced. Advertising is the mechanized process by which prospects are created for countless products, converted into customers and kept as steady consumers. Advertising is to Marketing what the machine is to manufacturing.

The Advertising task is complicated today by the new products coming out of new discoveries and processes; by more brands in every product category; by self-service and the consequent need to pre-sell a product before the purchaser even gets to the point of purchase; by the indifferent personal selling in many conventional stores.

IN MEMORIUM

It is with deepest regret that we announce the death of S.A.M National Vice President of Membership, Eugene R. Ruark. In behalf of the members of the Society, Executive Vice President Harold R. Bixler has tendered condolences to Mr. Ruark's widow.

ADVERTISING even complicates its own task because there are more advertisements, more media and so greater difficulty in getting through to the readers' and listeners' minds.

The growth of Advertising is truly remarkable.

In 1945, the total volume was $3 billion.

In 1955, the volume was $9 billion.

In 1956, it will surely top $10 billion.

By 1965, I'd say it could easily reach *25 billion dollars.*

This fantastically greater volume means that Advertising must take on a strategic task in the Marketing operations of our companies. Advertising must mass-produce customers as factories mass-produce products in a growing economy.

I'd like to suggest five basic points to guide Advertising into its decade of greatest impact and value to our welfare.

1. Advertising campaigns and every ad in a campaign should have a specific objective so that the time, talent and money invested in it will be a positive contribution to the overall Marketing objective.

2. Advertising must create customers. Every ad must therefore contain a sales idea that will move people, and so move merchandise. The creative people in Advertising must be trained and encouraged to develop fresh, new ideas that will make their words ring—and make the cash register ring, too!

3. Advertising must be truthful. Copy must tell a good story and tell it straight. Sharp copy blunts an advertiser's reputation.

   Advertisers must not relax their efforts to keep their houses in order. Recent activity on the part of legislation to enact statutes leveled against bait advertisers reflects the public attitude toward questionable advertising practices.

   Rather than resort to new legislative methods, it would seem better that Advertising itself be a more effective policeman with advertisers, agencies and media who lean toward the fast buck instead of Truth in Advertising. The code of ethics established by the many associations in Advertising and Marketing, the Printers' Ink Model Statute in most of the 48 states and the activities of the Better Business Bureaus certainly give us the necessary instruments with which to discipline offensive members.

4. Advertising must be integrated with the Marketing program. Advertising, Selling, sales promotion, research, packaging, pricing—these and all other Marketing activities must be tied together, correlated and integrated so they will all be working smoothly toward their common goal. They should not be pulling in different directions through lack of a master plan or because each executive works out his own destiny. Packaging, for instance, is no longer just a matter of putting a product in a container. If a product is sold in retail stores, the package should be designed to reach out for the buyer from the store shelf. It must also register a distinct sales impression from the magazine page and the TV screen. The design of the package, the kind of illustration, the color used are decisions that must be shared by the entire Marketing team.

5. Advertising should recruit talent for its development. Good people can be found in other areas of a company's operation and in other kinds of work. They should be sought out and sold on making Advertising their career.

   Education in Advertising is getting more attention from all quarters. Universities, colleges and business schools are improving their curricula and enrolling more students. Those who have received such education in Advertising should be brought into the field so they can contribute to its further growth.

   Advertisers, agencies and media are developing on-the-job training courses. People who have received this help should certainly be kept in the field.

May I conclude by quoting three leaders in three widely separated fields.

Paul Mazur, senior partner in the Wall Street firm, Lehman Bros. said in his book, *The Standards We Raise:* "The power of Advertising is one of the great persuasive forces not only in educating men and women to a higher standard of living but also in providing industry with its necessary sales volume and workers with their high wages and purchasing power."

Professor David Potter of Yale, in his book, *People of Plenty*, says that modern Advertising was brought into being by and is peculiarly identified with American abundance. ". . . Advertising now compares with such long standing institutions as the school and the church in the magnitude of its social influence."

In his very stimulating discussion of Advertising as the Institution of Abundance, he points out that "Advertising is not badly needed in an economy of scarcity, because total demand is usually equal to or in excess of total supply, and every producer can normally sell as much as he produces. It is when potential supply outstrips demand—that is, when abundance prevails—that Advertising begins to fulfill a really essential economic function."

HAL STEBBINS, one of America's great copy writers, sums up in a fine piece of copy the place I think that Advertising occupies in The Marketing Concept:

"It's up to us to show what a dynamic force can do in an atomic age:

Let's move products by moving people.

Let's make the truth exciting.

Let's bear in mind that people buy what they want, not what they need; and that our American economy can't keep in high gear unless the nation's products are not only produced but consumed.

Let's create advertising that not only sells but builds integrity and prestige for the company that sponsors it—and, in the process, builds believability in all advertising.

Let's quit apologizing for being in advertising—and for spending money for advertising.

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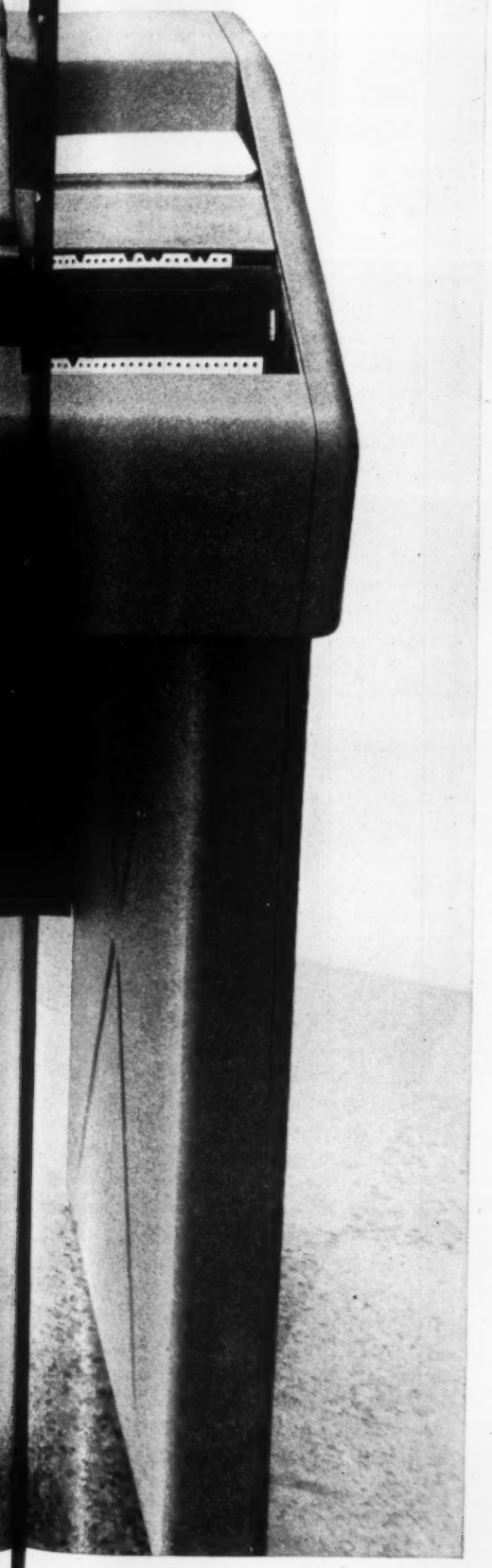
Royal McBee is cutting automation down to size



NEW KEYSORT TABULATING PUNCH

Gives you automatic punched-card processing with one low-cost machine!

The Keysort Tabulating Punch today cuts automation down to size by providing, in just one compact unit, everything required for complete punched-card processing. With greatest adaptability to a company's size and set-up. And at a rental of less than $100 a month.

Keysort Tabulating Punch code-punches and tabulates quantities and amounts in Keysort cards . . . then reads, duplicates and summarizes these figures . . . simultaneously printing them for visual verification. The most versatile machine of its kind available. Easy to master, easy to use. In almost every area of plant control — job costing; labor distribution; inventory; labor, material and production control; sales and order analysis. In service organizations and hospitals — in every type of operation requiring fast, accurate data processing.

Call your nearby Royal McBee man to arrange a demonstration, or write us for illustrated descriptive folder.

OUTSTANDING FEATURES ★ Simple operation from 10-key keyboard ★ Punches 2 quantities in one operation (dollars-hours, dollars-units etc.) ★ Simultaneously tabulates all amounts ★ Reads sorted cards, automatically accumulates and totals punched amounts ★ Prints all figures for immediate verification ★ Adaptable to any size work-load . . . to centralized and decentralized operations.

McBEE KEYSORT®

PUNCHED-CARD CONTROLS FOR ANY BUSINESS

ROYAL McBEE Corp. PORT CHESTER, N.Y., Offices in principal cities. In Canada: The McBee Company, Ltd., Toronto 18

Memo To Top Executives: Don't Depend On Dave Beck And Hoffa

by H. H. Carey
Management Consultant
Philadelphia

YOU AND OTHER Top Executives have been concerned for a long time about the fact that both the general public and employees have had a more favorable attitude toward union officials and organized labor than toward employers.

Your right and responsibility to manage the business has been jeopardized. Some of this encroachment by unions has come about because of a lack of carefully thought through and forthright management philosophy and action. In some companies, hasty and emotional decisions and action have compromised management's position and further solidified employees and the public behind union leaders. Ill-advised mutual consent clauses have been accepted in union contracts and thus has taken certain matters out of management's hands. Under the pressure of competition, certain necessary actions have been taken by the short-cut method which did not prepare the way for a reasonable degree of acceptance by union officials and rank and file union members. In other cases, management has not taken as firm a stand as should have been taken against union pressures.

Under the conditions that have arisen and prevail, a sense of frustration and hopelessness has come over many Top Executives. In this situation many have been looking for the "miracle" that will redress the balance. Some have even thought that "it will take another depression".

Nothing could be farther from the truth. In such circumstances it would be like the situation in Britain where a pro-Jewish man upbraided one of the politicians for not following through on Lord Balfour's declaration of intent to set up a Jewish homeland. The politician listened carefully, then replied simply, "We counted the Jews and we counted the Arabs. There weren't enough Jews." In a depression, our own politicians would have to be realistic and say, "We counted the employees and we counted the employers. There aren't enough employers."

And so in the event of a depression, unions would naturally turn more from economic pressure to political pressure to safeguard what they consider to be labor's interests and rights as opposed to employer's interests and rights.

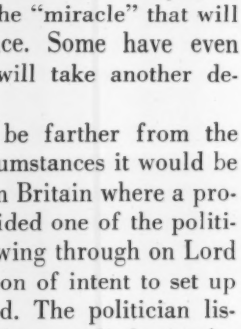
Recently, hope for "the miracle" has been revived in the minds of many Top Executives. This hope has come out of the Senate Committee's investigations centering on Dave Beck, Hoffa and the Teamster's Union. At long last the public would be aroused to the evils in organized labor, and more generally sympathetic to employers. They will demand legislation that will weaken union strength and be more favorable to employers.

This is a forlorn hope. There may be some corrective labor legislation. But there is no hope for the miracle that will redress the balance in favor of employers. The hope that both public and employee opinion will be substantially turned *against* unions, and *toward* employers is entirely unrealistic.

It can be expected that one of the results of the investigations by Senator McClellan's Committee will be more unfavorable attitudes toward unions and some of their malpractices. But there will be no equal creation of favorable attitudes toward employers.

So, *don't depend on Dave Beck and Hoffa.*

If the unfavorable balance is to be redressed, it will be done only by con-



H. H. Carey was associated with the Western Electric Company from 1922 to 1946 in sales, production control, and personnel and industrial relations; his last position with that company being Supervisor of Personnel Administration of the General Personnel Department, in New York. Since 1946 he has been a personnel consultant. Mr. Carey coined the phrase "consultative supervision and management" as it was first expressed in *Nation's Business* (1937) and again in *Personnel* (1942). He is a member of the Philadelphia Chapter of the Society for Advancement of Management.

structive, sound and systematic action on the part of Top Executives in their respective companies.

In each company, the prime objective should be to develop and maintain a more favorable attitude on the part of the general public and employees toward the company as an entity—and Top Executives as individuals. This is a job that will require much more of the personal time and effort of Top Executives.

What are the starting points—the fundamental considerations—which must underly this constructive, sound and systematic action?

First: It should not be based on an *anti-union* attitude and philosophy. It should be just *pro*-management. Unions are here to stay and they have their proper role. Unions are grounded in national legislation, and the feeling on the part of the general public that most employers cannot be expected to give adequate consideration to employees' welfare and interests voluntarily. Traditionally, the American public has always favored the underdog.

Second: Top Executives are in never-ending competition for the confidence and loyalty of employees and the general public immediately involved or surrounding their operations. Too many executives take for granted that these flow to them, or should flow to them naturally out of the employment situation. It does not. It has to be earned. And it has to be worked at with earnestness and sincerity. It is not a job beneath anyone's dignity.

COMPANY policies and programs touching on the field of personnel, industrial and labor relations are very important. But the personal respect and confidence won or lost by Top Executives in the course of their personal contacts and relationships is the most critical and overriding matter. The frequency of such contacts with individuals and groups should be stepped up. They should be made on matters arising naturally out of the work situation. It will require the highest persuasive and sincere effort, comparable in some ways to that required of politicians in order to win and hold office.

There is no substitute for this personal effort on the part of Top Executives if the balance of power is to be redressed. The job cannot be delegated. If Top Executives do not have the time, it will have to be taken; otherwise just skip the whole thing and let matters take their course. Union officials will continue to work at the problem most of their days and nights.

Third: Whatever has been accomplished already in any company—no matter how good—is not good enough. The job has to be worked at constantly, not just when the pressure of operations lets up a bit, or when it seems convenient, or when a crisis is building up.

What To Do?

If the problem concerns or interests you, here, for your consideration, are some ideas that may be helpful in reappraising your Company situation, and charting your course of action:

1. A carefully thought through and written management philosophy ("What We Believe") with respect to the human relations field is requirement Number 1. It is not enough that the owner, president, or a few influential men at top level shall have a general notion about treating people fairly, and management's right to run the business.

2. Based on the management philosophy, there needs to be a more explicit statement of company policies related to what employees have a right to expect from the company. This should be done even though there may be applicable union contracts. People should know what the company stands for—not just what it may have been forced to put into a contract. Keep the policy statement alive. Work at its fulfillment. Don't file it in the drawer just to show visitors.

3. Requirement Number 3 is a periodic review and appraisal of the company's program arising out of its management philosophy and policies. Take nothing for granted. Be as thorough in this as in the realistic appraisal of matters pertaining to sales, research, engineering and production.

4. Get the mutual agreement and consent clauses out of any contract on important items. Mutual agreement and consent is a fine objective if you can bring it about. But on any vital matters it can take the management of the business right out of management's hands.

5. Establish and maintain lines of communication *direct to employees.* Don't depend entirely on the union to convey management's point of view to the rank and file. That's the easy way. But in a critical situation it may be the thing that will lick you.

6. Make sure that the entire management group, down to and including Foremen, get the information before, or at least simultaneously, with union officials.

7. Work on the assumption that even though you have a right to manage the business, it must be done in such a way as to win a reasonable degree of acceptance among union officials and employees generally. This means that employees and/or union officials should be consulted in advance on most contemplated company plans and programs affecting employees' interests and welfare. While the right of decision should be firmly and tactfully held in management's hands, a great deal of understanding and acceptance can be gained if people feel sure that their point of view is thoughtfully and carefully considered by management before decisions are made.

Nobody likes unilateral action. Not even you. Don't take the short short-cuts too often. Even though you may be right, you can still get killed at the intersection. An ounce of consideration in advance is worth a pound of grievance procedure and attempted justification after the fat is in the fire.

8. Employees should be brought to a better understanding and acceptance of:

a. Our competitive, economic system

b. The problems continually facing the company under such a system

c. The values of the system to them

d. Their individual responsibilities to the company under such a system

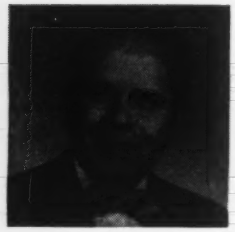
e. The areas of mutual interest between employees and the company

These things which you take for granted, and upon which most of your action is based, are not even vaguely understood by most employees. Union officials who may understand and appreciate your problems in this area won't go very far in cooperating toward your objectives. As you know, it is the "kiss of death" for a union official to be labelled a "company man."

9. Make sure that there is a reasonable understanding—and acceptance, if possible—of the respective roles of management and union officials in the particularly sensitive areas of discipline, job evaluation and work standards.

10. Salt the continual drive for reduced costs, improved quality and service with some demonstrated consideration of the things that will increase employees' job interest and job satisfaction. Compliance may be bought. A high degree of cooperation must be won.

11. As pointed out in recent Warner Swazey ads, try to get employees to



A Tribute To Phil Carroll

THE National Executive Committee, at its last meeting, felt that all S.A.M members should now have the opportunity of knowing about the following significant and generous act of Phil Carroll. Phil relinquished the chair when the motion was proposed, then accepted it "under protest". He urges each member to participate in Regional Development for continuing S.A.M progress, since "Individuals Make The Society".

The Tribute

WHEREAS, Phil Carroll, through his personally conducted seminars and conferences, has added significantly in the advancement of management and in the development of management men;

WHEREAS, the S.A.M chapters that sponsored these conferences and seminars have benefitted, in addition, by the enrichment of their treasuries through the financial returns of these programs;

WHEREAS, Phil Carroll has utilized his personal share of the financial returns of these conferences and seminars during the past year in the establishment of an Award Fund to be used to further the purposes of the Society in such manner as the Executive Committee may determine;

WHEREAS, the Executive Committee has decided to use this Fund for the worthy purposes of promoting and developing regionalization and new chapters that will add further strength to the Society;

The Executive Committtee, therefore, on motion unanimously and enthusiastically adopted, hereby expresses its commendation for this magnanimous action by Phil Carroll, indicative of his great interest in, devotion and continued contribution to the growth of the Society, and, furthermore, requests that a notice of this motion be conveyed to the entire membership of the Society through "Advanced Management".

understand that they are in competition with employees of competing companies, not against their own management.

12. Take nothing for granted in launching new programs and activities. Prepare plans and programs with the point of view that good end results may be completely nullified or jeopardized by overt or passive resistance.

13. Make sure that employees who are not represented by a union are treated with as much consideration, and receive as favorable action as those who are organized. Most Top Executives reassure themselves on that point pretty fast. Alas! Too busy.

14. Treat all union officials with the respect and consideration they feel they deserve as *symbols* of organized labor, not as *individuals* from the punch press or shipping departments.

15. Work at the problems of personnel, industrial and labor relations with the same earnestness and zeal as you work at other management problems. Your own personal efforts and contribution to the success of the company in particular areas may be great. But they are insignificant in relation to what you may accomplish as the prime mover in developing and motivating the entire organization—the management, supervisory and non-supervisory people through whom you accomplish everything beyond your own individual results. Working with people intelligently and motivating them to the highest possible degree of cooperation toward company objectives is the best and only way to secure and hold the company's competitive advantage. If you are successful in this area, all other matters will be taken care of.

16. Don't be confused about "this human relations stuff." After a recent strike one of the top executives of a big corporation said—"We're going to cut out this human relations stuff from now on. We're going to put the screws on 'em."

Good human relations is not "just being nice to people," "soft-soaping" them, "letting them think they are 'participating,'" or talking about cooperation out of one side of the mouth.

GOOD human relations is nothing more nor less than intelligent management—getting people to work effectively, and in good spirit. And you don't have either unless you have both.

Be prepared for failure and frustration. Your best motives and action will be misconstrued, deliberately or otherwise. Confidence and loyalty spring from the heart not the head. They are a long time building. The tide is not swept back with one or two gestures. But you can't give up. "A quitter never wins, and a winner never quits" is just as true in the employee and public relations field as it is in athletic competition.

17. Consider that what you do in your company every day conditions your employees and the surrounding public to a better acceptance—or rejection—of the Free Enterprise System.

The overall impact of what Top Executives do in the field of human relations in their particular companies is cumulative in the community, state and nation. It has terrific potential, for good or bad, in the political situation in our country. Likewise, in the world situation. Top Executives are not only the instruments of the Free Enterprise System; to employees and the public, they are its representatives in a very personal way. The only ones they have an opportunity to know are those in their own companies.

Every company in every community is a unit of strength or a cell of weakness in our national system. Top Executives must win and hold, personally and individually, a higher degree of loyalty and confidence among employees and the public as a matter of survival in the East-West struggle.

There is no choice. We can't quit. "In order for the forces of evil to triumph, it is only necessary that good men do nothing." In the ultimate struggle, either in a cold or hot war, our best is none too good. Anything less is to say, "Okay, Khrushchev, take over." ■

The Effect Of Automation On The Breakeven Point

by James L. Lundy

Assistant Professor
Department of Mechanical Engineers
University of Minnesota

IT IS commonly believed that mechanization and automation increase the breakeven point of a firm. In fact, one even finds in the literature numerous statements which lead one to believe that increased breakeven points constitute an unavoidable consequence of mechanization and/or automation. The material which follows is presented in an effort to dispel this misconception, for although mechanization and automation often do lead to increased breakeven points, they do not *always* do so.

Before going any further perhaps we should pause long enough to establish a foundation of terminology and assumptions. First, let us accept mechanization as the substitution of machinery for muscle power and various degrees of automation as the substitution of varying degrees of control and mechanical integration for skill. Also let us assume that increased sales can be achieved without a reduction in price and that cost functions are represented as linear rather than curvilinear. Acceptance of these assumptions simplifies the discussion and establishment of the point to be made in this article, but, as will be pointed out later, such assumptions are not essential to the demonstration. We are now in a position to represent a firm's costs and income as shown in Figure 1.

Fixed costs are those costs which are invariant over the range of output under consideration and are composed of such charges as depreciation or rent for a building, time-oriented equipment rentals, and executive salaries.

Variable costs are those costs the total of which varies according to output inasmuch as the unit costs are invariant. Material and direct labor expenses are illustrative of variable costs. Although we might also talk of semivariable costs, we shall assume such costs to be divisible into fixed and variable components for simplicity of treatment.

This article has been adapted from material in the author's book entitled Effective Industrial Management (*Macmillan*, 1957).

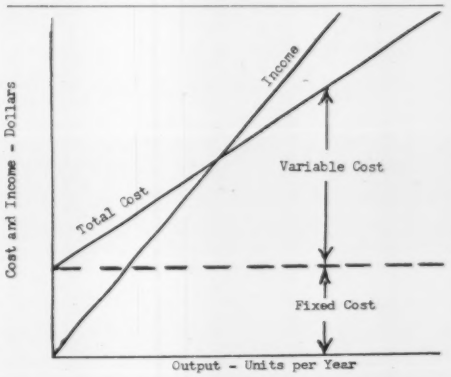


Figure 1 - A Simple Breakeven Chart

The breakeven point is defined as the level of output at which income equals total cost. Since total cost is comprised of fixed and variable expenses, by assuming a fixed income schedule we can analyze the influence of automation on the breakeven point by studying what changes, if any, occur in the fixed and variable cost schedules.

PROFESSOR LUNDY has been with the University of Minnesota since 1954, first as Instructor, then Lecturer and currently as Assistant Professor. Prior to this teaching assignment he was an engineer with the Minneapolis-Honeywell Regulator Company. He is also a free-lance Management and Industrial Engineering Consultant. He is a Contributing Editor to *The Engineering Economist*, a Member of the Board of Directors of the Minnesota Society of Industrial Engineers and a Member of the Twin Cities Chapter of the Society for Advancement of Management. He is the author of the book, *Effective Industrial Management*, published by the Macmillan Company in 1957.

First, let's look at fixed expenses. When one mechanizes or automates a process he often adds machinery and controls or substitutes more expensive machines and controls, resulting in increased fixed costs. However, it is important that one realize that although automation and mechanization often (or even usually) result in increased fixed costs, they don't *always* do so. For instance, a manufacturer with a large building and many relatively inexpensive machines might, through further mechanization and automation, substitute a few very expensive pieces of equipment which would require less space and thus permit the utilization of a smaller plant. Either (or both) the equipment and building costs could be reduced and result in a reduction, rather than an increase, in total fixed costs.

However, if we assume increased fixed costs in a particular case, in the absence of some other benefit (such as improved product quality) justification for this increase in all likelihood would be traceable to a decrease in variable costs. Figure 2 shows such a case. Note that the breakeven point has risen from Q_1 to Q_2. Note, though, that if a sufficient decrease in variable costs accompanies the increase in fixed costs, the breakeven point will fall. Figure 3 illustrates this type of change.

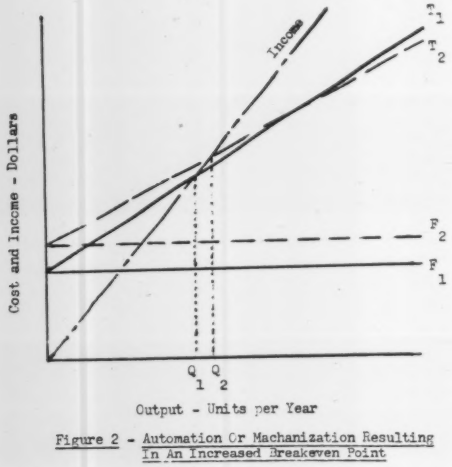


Figure 2 - Automation Or Machanization Resulting In An Increased Breakeven Point

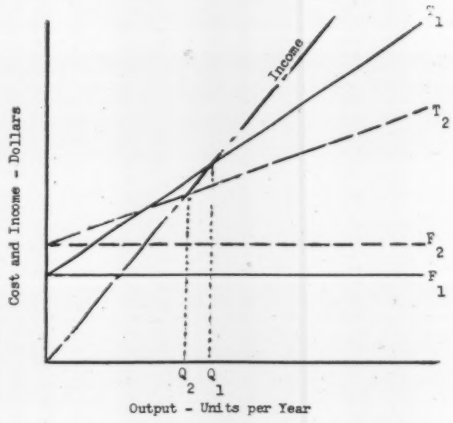


Figure 3 - Automation Or Mechanization Resulting In A Lower Breakeven Point

Figure 4 shows that automation might cause the breakeven point to increase from Q_1 to Q_2 if price is held constant, yet if the competitive situation forces a reduction in price from P_1 to P_2, the breakeven point for the automated situation (Q_3) is lower than the breakeven point would be (Q_4) were the plant not automated.

That the effect automation will have on a firm's breakeven point cannot be predicted until specific data are available for the case also can be shown by simple algebra. Let Q be the breakeven point, V the unit variable cost, F the total fixed cost, and P the selling price. We know that income equals expense at the breakeven quantity, or

$$PQ = F + VQ$$

Therefore, the breakeven quantity can be expressed as

$$Q = \frac{F}{P - V}$$

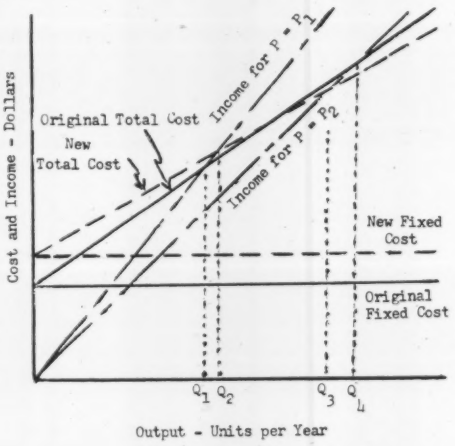

Income for P = P_1
Original Total Cost
New Total Cost
Income for P = P_2
New Fixed Cost
Original Fixed Cost
Cost and Income - Dollars
Q_1 Q_2 Q_3 Q_4
Output - Units per Year

Figure 4 - The Influence Of Automation On The Breakeven Point, Price Variable

It is apparent that the extent and direction of change in the breakeven point depend on the extent and direction of changes in fixed costs, variable costs, and price.

Curvilinear cost and income curves such as those shown in Figure 5 often are used to represent more realistic data than are presented by linear schedules. The decreasing slope of the income curve reflects the necessity of price reductions if sales are to be increased. The decreasing slopes shown in the left-hand portion of the cost curves are traceable to the benefits of increased specialization which may accompany volume increases, and the increasing slopes to the right are based on the law of eventually diminishing returns.

Note that the application of curvilinear schedules provides two breakeven points instead of one, with the optimum output lying somewhere* in between. However, when linear functions are used it appears that without limit the greater one's output the more will be his profits —a very unrealistic situation.

It was mentioned earlier that the assumption of linear cost and income functions was strictly for the purpose of simplifying the discussion. Figure 5 shows a possible reduction in the lower breakeven point (from Q_1 to Q_3) and an increase in the upper breakeven point (from Q_2 to Q_4) based on a change in the curvilinear cost schedule. Other schedules could be drawn to illustrate cases in which both breakeven points could increase or decrease, or to show changes in one of the points without any change in the other.

From the above discussion we can conclude that although mechanization and/or automation may be accompanied by an increase in the breakeven point, an increased breakeven point is not an inevitable consequence of these developments. It follows, therefore, that before a proposal to mechanize or automate is discarded because of a manager's desire to avoid an increased breakeven point, an analysis should be made to determine whether the proposed change actually will lead to the feared increase. ■

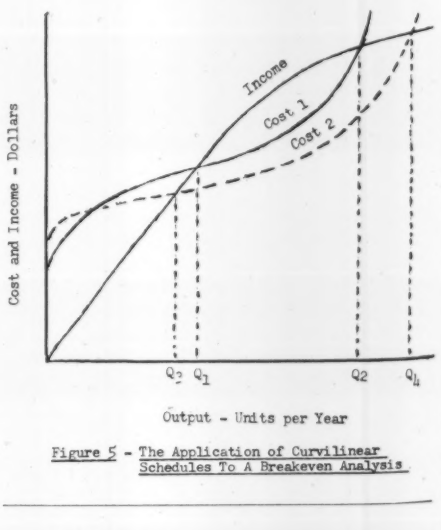


Figure 5 - The Application of Curvilinear Schedules To A Breakeven Analysis

* *Specifically, at the output at which marginal cost equals marginal revenue, or, in other words, where the slopes of the cost and income curves are equal.*

Personality And Job Satisfaction

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THERE IS a definite need today to take into full account the possible consequences of our industrial order in mechanizing the mind, creating mental conflicts, diminishing creative power, and setting the stage for individual dissatisfaction and maladjustment at work. It is not to be denied that there is little merit in a civilization which dulls the mind, warps the emotions, destroys the will, and reduces the individual to an automaton, even though it succeeds in providing an ever increasing supply of material goods. For this reason, more and more psychologists are concerned with the satisfactions derived by the individual from the job. With these thoughts in mind, the purpose of this paper is to discuss the dynamics of personality and job satisfaction in the industrial and business setting.

A common charge against modern industry is that it has made work dull and spiritless, and the means of self-expression has been taken away. With the coming of the Machine Age it has been said that the workman has lost his joy in production.[1] Concerning this, Morgan states:

> *. . . work is so specialized, so devoid of intrinsic interest that the workman finds no incentive to work . . . the nature of the daily work of most of the working people precludes the possibility of their loving the work. Most of them hate it, and how can they help hating a job which means, for instance, that they go through a set of motions (which they learned in a very short time) hundreds of times a day with the prospect of day after day, week after week, year in and year out doing the same thing?*[2]

Although such statements seem to appear extreme in view of modern studies of repetitive work, there is, nevertheless, considerable evidence that many workers are dissatisfied with their jobs. For example, according to a survey conducted by Roper for May 1947 *Fortune*, 20% of a nation-wide sampling of factory workers found their jobs to be dull and monotonous most or all of the time. In another study conducted by R. Centers, involving a sampling of the entire occupational stratification of the United States, it was found that 13% of all manual workers were found to be dissatisfied with their jobs.[3] Similar findings are reported by Hoppock and his associates. They suggest that 20% to 25% represents a fair estimate of the proportion of dissatisfied workers, and that the percentage of workers dissatisfied with their jobs is particularly high at the lower levels of the occupational hierarchy.[4]

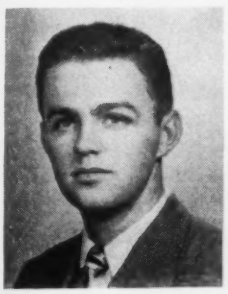
With these rather high reports of job dissatisfaction, a consideration of the dynamics of personality in job satisfaction appears highly relevant. It is first necessary, however, to distinguish between two sources of job dissatisfaction. One source is a maladjustment specific

[1] *S. Webb and B. Webb*, Whither Mankind? (*New York: Longmans, Green & Co., Inc.*, 1928), *pp.* 140-141.

[2] *J. J. B. Morgan*, "*Why Men Strike*," American Journal of Sociology, *XXVI* (1920), *pp.* 207-211.

[3] *R. Centers*, "*Motivational Aspects of Occupation Stratification*," Journal of Social Psychology, *XXVIII* (1948), *pp.* 187-217.

[4] *M. S. Viteles*, Motivation and Morale in Industry (*New York: W. W. Norton & Co.*, 1953), *p.* 10.



MR. SMITH has a B.A. in Liberal Arts from the University of the South (Tennessee) and an M.A. in Psychology from the University of South Carolina. From 1950-52 he worked for the Steel Heddle Manufacturing Company in Purchasing and Inventory Control Department as Assistant to the Purchasing Agent. His next job was with Deering Milliken Company as Production Trainee. He has been with Celanese Corporation of America for the past three years. He also works one evening a week as an Instructor in Industrial Psychology at Queens Evening College in Charlotte, N.C.

to the job; another is that which is indicative of a generally maladjusted personality. In the former case, the worker is well adjusted in his personal and social life but incapable of acquiring the proper perspective toward his job or maintaining a satisfactory relationship with it. In other cases, failure to adjust to the working situation merely is an instance of the individuals inability to adjust to life in general. It is important to note that the symptoms of maladjustment may be the same in either case. In the first instance, performance at work and satisfaction derived from the job are determined by factors which are more or less external to the individual. In this situation, the achievement of adjustment and job satisfaction represent modern management's major objective in using such procedures as selection, training, good supervision, elimination of fatigue and monotony, wage incentives, and satisfactory working conditions. But in spite of the application of these methods, individual instances of maladjustment still occur. This follows in part from the dynamic or changing quality of human personality. The young man who, at the time of employment, is satisfied with a routine clerical task, and who can satisfactorily perform the task, becomes increasingly dissatisfied and perhaps grossly maladjusted if deprived of an opportunity for promotion to a more responsible job.

REGARDING the second instance, the generally maladjusted personality, job dissatisfaction is simply a reflection of emotional maladjustment, a term used by V. E. Fisher and J. V. Hanna, to describe the wide variety of psychotic disturbances of personality which affect individual adjustment in every phase of life.[5] Normal adjustment of an individual requires an integration of conflicting tendencies to the demands of the activity in which he is engaged. Emotional maladjustment follows from a conflict in the individual of impulses which are incompatible with one another. It reflects a disturbance in the integration of opposing tendencies into the unified and purposive pattern of behavior which is the essential characteristic of the "normal mind" and of the "happily adjusted individual."[6] Maladjustment from this point of view, grows out of a failure to knit together contending impulses and to contrive an adjustment to the situation which is satisfying to the individual and effective in so far as the demands of the situation are concerned.

In these cases the dissatisfaction of the workers results from an inadequate emotional adjustment to major aspects of life—to superiors, to inferiors, to family situations, to sexual problems, to competitive aspects of daily life, etc. The individual whose emotional balance is disturbed for any reason whatsoever will express this not only in his relations at home, in his social group, but also at work. His emotional maladjustment, whatever it relates to,

> *"breeds within him dissatisfaction and thwarts him in his search for happiness and success. Inasmuch as his feelings and emotions are inherent aspects of himself, he carries them with him, so to speak, into every situation which he enters. Now, since he does not usually know the reason of his dissatisfaction, does not understand the whyfor and nature of his maladjustment, it is not surprising that he very frequently attaches or attributes it (his dissatisfaction) to his work or his working situation. He then feels dissatisfaction with his work and becomes a vocationally maladjusted individual.*[7]"

The overt expressions or symptoms of emotional maladjustment on the job are numerous in character. Not infrequently, for example, manifestation takes the form of blaming others for one's failure. In such cases, fellow-workers, foremen, the management, and even social standards and customs may be burdened with the responsibility for the individual's lack of success. Wives do not give encouragement, fellow-workers do not cooperate, or superiors fail to recognize the superior qualities of such individuals. Compensation for thwarted desires is achieved through a condemnation of associates, supervisors, conditions of work, or in extreme instances, of some single person, perhaps even as remote as a high government official, who has placed himself in the way of the individual's progress.

In other instances those whose self-assertion finds no outlet, or who are thwarted sexually or socially, manifest a disintegration of impulses in self-pity, jealousy, and lack of co-operation. The slave-driving tactics of the "hard-boiled" foreman often represent his compensation for impeded self-assertion in pretending to be the opposite of what he actually is. As some men "sport" the latest car or indulge in outward display of affluence in the face of a limited income to impress their neighbors, so the supervisor falls back on a loud and dominant tone of voice to bolster up his feeling of insecurity—a feeling of inferiority.[8]

THE most common overt expressions of such maladjustment may, according to Fisher and Hanna, be divided into two groups. They are as follows:

I. Manifestations of the milder emotional maladjustments.
   (1). Petty jealousies.
   (2). Mild forms of self-pity.
   (3). Lack of cheerful co-operation.
   (4). Fault-finding.
   (5). Hard-boiled tactics and labor agitation.
   (6). Desire for undue attention, feigned bravery, and foolhardiness as a retreat from fears.

II. Manifestations of the more serious emotional maladjustments.
   (1). Frequent change of jobs.
   (2). Extreme reticence and withdrawal.
   (3). Tired feelings.
   (4) Spasmodic and irregular application.
   (5). Day-dreaming.
   (6). Deficiency in range and power of attention, distractibility.
   (7). Extreme irritability.
   (8). Nervous indigestion, nausea.
   (9). Feelings of being spied upon, watched or followed.
   (10). Abnormal fears, fear neuroses.
   (11). Hearing voices.
   (12). Miscellaneous symptoms.[9]

The sources of these disturbances, according to the same authors, may be classified under three general headings:

(1). Those resulting from emotional immaturity, emotional infantilism.

(2). Those resulting from the exaggeration or over-expression of one or more drive-emotions.

(3). Those resulting from decidedly unnatural or abnormal expressions of drive-emotions, i.e., from substitutive forms of activity which are neither satisfying to the individual nor contributory to the welfare of the social group.[10]

Many investigators have pointed to the importance of emotional maladjustment in interfering with adaptation and satisfaction at work. According to Fisher and Hanna, one-half of the amount expended annually because of labor turnover is spent on the replacement of emotionally maladjusted workers. Assuming the average cost of breaking in a new worker to be $45.00, turnover

[5] *V. E. Fisher and J. V. Hanna*, The Dissatisfied Worker (*New York: The Macmillan Co.*, 1931), *p.* 260.

[6] *W. H. Burnham*, The Normal Mind (*New York: D. Appleton & Co.*, 1924), *p.* 27.

[7] *Fisher and Hanna*, op. cit., *pp. vii-viii.*

[8] *Morris S. Viteles*, Industrial Psychology (*New York: W. W. Norton & Co.*, 1932), *p.* 588.

[9] *Fisher and Hanna*, op. cit., *p.* 209.

[10] Ibid., *p.* 72

cost in this group would amount to $4,500.00 for a firm employing an average working force of 500 men with a labor turnover of 40 percent. To this must be added the higher cost of supervision of the emotionally maladjusted worker and of increased absenteeism and reduced output.[11]

A 1917 analysis by H. M. Adler of 100 cases of unemployed patients, ranging in age from 25 to 55, observed in the Boston Psychopathic Hospital, points also to the importance in vocational maladjustment of paranoid personalities displaying such traits as suspiciousness, contentiousness, inability to survive in competition; of inadequate personalities including feeble-mindedness and disturbances of the judgment; and of emotional instability, characterized by moodiness, outbursts of temper and impulsiveness.[12]

A study by V. V. Anderson has led to the conclusion that approximately 20 percent of the employees of mercantile establishments may be called "problem" individuals. Among 1200 employees comprising a fairly representative group (employees of R. H. Macy and Company), 19 percent of the sales people and 23 percent of the non-sales force were found to create conditions that caused their department heads to question their value as personnel risks in the store. A large proportion of these conditions represented personality disturbances and were not the outgrowth of intellectual conditions or of factors on the job itself which might interfere with adjustment and job satisfaction. Included among workers suffering from personality disturbances were persons who had never "grown-up"; whose experiences, instead of maturing and ripening, had simply carried the faulty characteristic of adolescence into adult life, producing the underdeveloped, inadequate, difficult, poorly integrated or unstable workers, commonly called "job misfits", or "work failures", or "mediocrities", or "ne'er-do-wells".[13]

Another factor to be considered in discussing the maladjusted personality and job satisfaction is the old age. This is a factor which is attaining increasing importance in modern industry. This follows in large part because of the difficulty experienced by the worker beyond middle-age in adjusting himself to the increased psychological demands imposed by the rapid rate of change of working conditions in industry. In addition to the growing disuse of learning ability for the older worker, the approach of old age is characterized by changes in personality make-up. Concerning this, Martin and de Gruchy states the following:

> *Summarizing the characteristics of the old, one may say that their physical and mental reactions are slowed down, that they are inflexible, slow to catch new ideas, that their prevailing emotions are disagreeable, that they are dependent and tend to look backwards, that their imaginations use only part experiences for present-day needs, that they incline to slovenliness and laxness in daily living and that they are forgetful and even untruthful in dealing with the past.*[14]

From these statements it is easy to ascertain how old age can play an important role in maladjustment at work, and it is a vital factor which management must deal with in the dynamics of job satisfaction.

A discussion of personality and job satisfaction cannot be considered complete without a consideration of the significance of the working group. There is, unquestionably, much justification for the insistence upon the force of the social situation in determining satisfaction at work. The many studies done at the Hawthorne Plant illustrate the psychological importance of the working group in determining job satisfaction.[15] Concerning this, Elton Mayo relates:

> *In industry and in other human situations the administrator is dealing with well-knit human groups and not with a horde of individuals. Wherever it is characteristic that by reason of external circumstance these groups have little opportunity to form, the immediate symptom is labor turnover, absenteeism, and the like. Man's desire to be continuously associated in work with his fellows is a strong, if not the strongest, human characteristic.*[16]

The problems of satisfaction in industry are, at least in part, problems of group relationships. Man by his very nature craves the society of his fellows. He needs companionship and the good will of his associates. One phase of this need is the desire for recognition and the esteem of others, which manifests itself in the informal groupings that are found in factories. Many problems in business and industry today grow out of the fact that the individual is always acting under group conditions. It is true that the individual characterized by a specific pattern of ability, temperament, individual wants and desires, represents the human material of industry.[17] Nowhere is his individualism completely submerged, but at no time at work is the individual freed from the powerful influence of the group. There seems to be no question that if an impulse or desire aroused in the individual is shared by his associates, that impulse becomes greatly reinforced. Even though this impulse may be opposed to the individual's own standard of conduct the influence of the group, the desire for the respect and approbation of his fellow-workers, may be sufficient to overcome the customary inhibitions against the response. Concerning this, E. D. Smith states:

> *When a common desire is intense and emotions are strongly aroused, the group of individuals who share the desire tends to become a mob or crowd in which individuality is submerged in the obsession of the common urge.*[18]

In industry there are many common points of view and desires, referring to such factors as working conditions, treatment by the management, methods of payment, etc., that are exposed to frequent stimulation. So similar are these interests that the denial of the rights of one member of the group may be taken as a denial of the rights of the entire group and lead to serious conflict in the business or industrial organization. Conversely, the satisfaction of the demands of a single individual or the adoption of what the group feels to be a desirable attitude affects the entire group and becomes a source of continued harmony. There is an increasing trend today for modern management to

[11] Ibid., *pp.* 233-234.

[12] *H. M. Adler, "Unemployment and Personality; A Study of Psychopathic Cases,"* Mental Hygiene, *I* (1917), *pp.* 16-24.

[13] *V. V. Anderson,* Psychiatry in Industry (*New York: Harper & Brothers Co., Inc.*, 1929), *p.* 364.

[14] *L. J. Martin and C. de Gruchy,* Salvaging Old Age (*New York: The Macmillan Co.*, 1930), *p.* 173.

[15] *George C. Homans, "The Western Electric Researches,"* Human Factors In Management, *ed. by S. D. Hoslett (Parkville, Missouri: Park College Press,* 1946).

[16] *Elton Mayo,* The Social Problems of an Industrial Civilization (*Cambridge: Harvard University*, 1945), *p.* 111.

[17] *Morris S. Viteles,* Industrial Psychology (*New York: W. W. Norton & Co.*, 1932), *p.* 619.

[18] *E. D. Smith, "The Minor Executive and Mental Hygiene,"* Preventive Management, *ed. by H. B. Elkind (New York: B. C. Forbes & Sons Co., Inc.*, 1931), *p.* 198.

realize the significance of the working group upon job satisfaction and attention is being focused upon pertinent problems in this field.

To understand and to insure and maintain job satisfaction in industry and business, there are today many devices and techniques at the disposal of psychologists and personnel workers. All of these may be considered basic tools in fitting the worker to his job. A few of these will be briefly discussed and studies relating to them pointed out.

SELECTING the worker for a job should include use of psychological tests and interviews. There are numerous tests for measuring various facets of personality and when used with interviewing provide a means of determining whether the personality is suited for particular requirements of a job. When this is done by trained personnel and the worker is placed on a job which best utilizes his particular personality traits, abilities, and interests, the chances for satisfaction in work are much greater. The volume of tests which measure aptitudes, interests, personality traits, ability, etc., is tremendous, and research in this field is constant and extensive. The writer recently performed a study in which it was shown that the scoring factors of Play and Flexor in the Activity Perception Test, devised by Dr. M. K. Walsh of the University of South Carolina, revealed significant results in differentiating between a group of female sales and clerical workers.[19]

A very interesting example of research which illustrates the significance of psychological tests in fitting the worker to the job is seen in a study done by Piotrowski and his colleagues in which criteria was developed for the selection of outstanding young male mechanical workers. The subjects for this study were a group of 450 recent high school graduates who were given the Group Rorschach. The final conclusions of the study, however, were based on only 78 cases. Age range for the subjects was from 16 to 23 of whom 86 percent fell into the 17 to 19 year range. The method of administration was that of Harrower-Erickson, with minor modifications. Eventually, a group of four signs, relatively easy to determine, was formulated. And since they discriminated between the outstanding and poor workers better than did any other combination of signs, they were regarded as Rorschach signs, specific for success in mechanical work. The signs did not appear to be measures of specific mechanical aptitudes but rather seemed to indicate mechanically nonspecific personality traits that enable the subjects to handle machines effectively, and to control the effects of stimuli likely to interfere with efficiency. They measure potential capacity for skillful mechanical work rather than the mechanical performance level, actually attained. These signs, used as a group, discriminated between the outstanding and non-outstanding mechanical workers among the 78 subjects with a discriminative value of .846. The validation criterion was a composite of the complete work record with data on quality and quantity, of output, ratings by at least three foremen in every case, and ratings by a trained vocational counselor. A brief explanation of these four signs is as follows:

m—a subject is credited with this sign if his original Rorschach record and/or the inquiry contain at least one interpretation which expresses movement of inanimate objects or of natural forces. However, interpretation referring to hanging objects, even though given with an apparent kinesthetic feeling, are not credited as m.

Frsx—the subject is credited with this sign if he has handled both Plate IV and Plate VI as competently as Plates I, II, III, and V. The following characteristics are taken as indications that the subject has been disturbed by either Plate IV or VI: (1) failure to give any meaningful interpretation to either IV or VI, (2) drop in form of linguistic expression, (3) emotional shock indicated by words expressing disgust or ideas of disintegration and destruction, (4) incongruous ideas.

hEvd—"high evidence" pointing to a progressive elaboration of inkblot interpretations by the subject.

noWF—no whole, form interpretation of Plates VIII, IX, and X.[20]

The use of such selection devices is an important aid in fitting the worker's personality to the job, and when they are used, job satisfaction is more likely to be obtained.

After the worker has been placed on the job, two very effective means for measuring or determining job satisfaction are the interview and attitude scales. The Western Electric Company has developed a systematic plan of interviewing for learning what their employees really think of their jobs, working condition, fellow employees, supervisors, and their company.[21] Prepared questions are not used and the employee is encouraged to talk, not only about grievances toward the management but about any personal matters which bother him. When interviewers who are trained in understanding the dynamics of personality are used, such a method provides a very good means for determining if the worker is satisfied with his job.

ATTITUDE scales can be considered measures of job satisfaction since it can be assumed that job satisfaction is inferred from the individual's attitude toward his work. Since attitude scales elicit an expression of feeling toward an object, they may be used directly with an individual to obtain such an expression. In addition, they permit quantification of the expression of feeling. Perhaps the most systematic attempt to develop an attitude scale as an index of job satisfaction was the one made by Hoppock in the early 1930's. Originally Hoppock tried out a series of simply attitude scales as part of an interviewing study of 40 employed adults. These scales were revised to consist of four items each with seven responses at step intervals. Values of 1 to 7 were assigned arbitrarily to the responses in each item, the smaller numbers being assigned to the responses indicating dissatisfaction. The range of possible total scores was 4 to 28. This system of scoring correlated .997 for 301 cases with a system of scale values assigned on the basis of z scores. The corrected split-half reliability coefficient for the scale for the same 301 cases was reported to be .93 and the "face" validity for the scale is assumed to be high.[22]

A more recent attitude scale which purports to be an index of job satisfaction is one devised by Brayfield and Rothe. It was constructed by a combination of the Thurstone and Likert scaling methods. The subject checks on a questionnaire form whether he strongly agrees, agrees, is undecided, disagrees,

[19] *E. L. Smith, "An Investigation of the Activity Perception Test in Differentiating Introversion-Extraversion Personality Traits in Female Sales and Clerical Workers as Determined by the Walsh Temperament Inventory" (Unpublished Master's Thesis, Department of Psychology, University of South Carolina,* 1954).

[20] *Z. Piotrowski, B. Candee, B. Balinsky, S. Holtzberg, and B. von Arnold, "Rorschach Signs in the Selection of Outstanding Young Male Mechanical Workers,"* Journal of Psychology, *XVII & XVIII* (1944), *pp.* 131-150.

[21] *H. W. Hepner,* Psychology Applied to Life and Work *(New York: Prentice-Hall, Inc.,* 1952), *p.* 467.

[22] *R. Hoppock,* Job Satisfaction *(New York: Harper & Brothers,* 1935).

or strongly disagrees with certain statements about his job. A reliability coefficient of .87 was obtained for this scale on a group of 231 employed female office employees in positions including entry, typing and stenographic, low and high skill level machine clerical, and accounting jobs. Evidence for the high validity of the blank rests upon the nature of the items, the method of construction, and its differentiating power when applied to two groups which could reasonably be assumed to differ in job satisfaction. Scores on this blank were also correlated highly (.92) with scores on the Hoppock blank in the sample studied.[23]

In order to aid individuals in obtaining satisfaction from their work and in understanding their personalities in relation to their jobs and life, in general, many writers purpose that business and industrial concerns establish some sort of service which will deal with the personality problems of their employees, as well as prevent maladjustment of the workers. Such a service would seem highly feasible. Ott B. McAtee agrees with this idea and relates the following:

Many employees work under a load of stress originating in domestic or work situations that approaches the limit of their capacity to deal with conflict. If their personality is strong, with little predisposition toward a neuroses, they can bear considerable stress without developing clinical symptoms. When the predisposition is marked, only a straw from their domestic or work stress may sometimes 'break the camel's back'. A person trained in psychiatry, psychology, or mental hygiene can do good by lessening the anxieties of living and working or strengthening the weak places in the employee-patient's personality.[24]

McAtee proposes a service whereby workers are periodically interviewed by persons trained in understanding personality and mental hygiene. Such persons should be able to elicit from the employee a good picture of his social, job, economic, and family adjustment, along with his hostilities and frustrations. A program such as this would seem in all probability to provide an effective means for maintaining adjustment and job satisfaction.

Fisher and Hanna have suggested the same sort of service. They propose the term *Mental Hygiene Department* within the industrial organization and state that it should be under the direct supervision of a consulting psychologist or a psychiatrist. The fundamental function of the mental hygiene department, they state, is the safeguarding through personal and individual contact of the mental health of the potentially unstable worker and the adjustment of the emotionally maladjusted worker.[25]

[23] *Arthur H. Brayfield and Harold F. Rothe, "An Index of Job Satisfaction,"* Journal of Applied Psychology, *XXXV (October,* 1951), *pp.* 307-311.

[24] *Ott B. McAtee, "The Establishment and Function of an Industrial Mental Hygiene Service,"* American Journal of Psychiatry, 107 (1950-51), *pp.* 623-627.

[25] *Fisher and Hanna,* op. cit., *p.* 244.

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Job satisfaction and happiness, as have already been pointed out, are dependent upon an adequate and varied expression of the emotional and impulsive make-up of the individual. When programs such as these, which aid in understanding the dynamics of personality, are instituted, and when the psychological techniques previously discussed in this paper are used, job satisfaction in business and industry will be more readily achieved. Not only will individual personalities gain from such devices but society as a whole will be immeasurably benefited. ■

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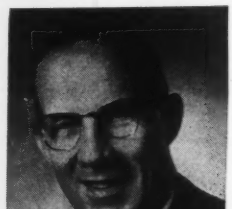
S. A. M *Newsletter*

Current news of interest to all S.A.M Members, specifically for the 900 Chapter and National Officers of the Society.



HAROLD R. BIXLER
Executive Vice President

NEW REGIONAL VICE PRESIDENTS ELECTED — Eleven Regional Vice Presidents have been elected by their constituent chapters thus far, and have been appointed to the National Executive Committee. This is part of the new plan of Regional Development for S.A.M Chapters, under the leadership of Vice President DAVID N. WISE, to provide the basis of growth and expansion throughout the country. It establishes fifteen Regions in place of the former five. The new Vice Presidents are: Central Region, A. L. BERND, Indianapolis Chapter; North Central, WESLEY KUETHER, Fox Valley; Metropolitan New York, WALTER E. ROBBINS, N. New Jersey; Northeastern, A. D. JOSEPH EMERZIAN, Hartford; North Atlantic, CARL A. BECK, Philadelphia; Southeastern, HEZZ STRINGFIELD, JR., Knoxville; Southern, MAURICE R. BACHLOTTE, Nashville; Canadian, J. GORDON CAMPBELL, Montreal; Midwest, WILLIAM A. BARKER, St. Louis; Northern California, WILLIAM R. WILLARD, San Francisco; South Atlantic, ROBERT B. CURRY, Washington.

Several regional meetings have already been held, and others are planned, to meet the growing interests and needs of the Society for Chapter, Regional and National Activities on a broad basis. This includes chapter development and operations, new chapter organization, membership promotion, conferences, programming, contacts with other organizations, and additional activities.

NATIONAL VICE PRESIDENTS APPOINTED — President CARROLL has reappointed the following Functional Vice Presidents for the new year, as part of the plan for over-all Society organization: Industrial Engineering: RALPH M. BARNES; Industrial Relations: SAMUEL L. H. BURK; University Chapters: HAROLD FISCHER; Materials Handling: WARREN J. KING; Marketing: AL N. SEARES; Small Business: L. T. WHITE; Chapter Operations: DAVID N. WISE; Chapter Conferences & Seminars: LESTER F. ZERFOSS.

President CARROLL has assigned membership promotion responsibilities to 2nd Vice President JAMES NEWSOME, who is also Chairman of the Civic Affairs Committee, and the Professional Manager Grade Committee. GEORGE SIEVERS has been reappointed Chairman of the Activities and Policies Study Committee, and GEORGE TALLY has been appointed Chairman of the Chapter Performance Awards Plan Committee.

NATIONAL TRAINING LABORATORIES — Plans are now being completed for three additional S.A.M—N.T.L. Workshops in Leadership Skills, to be conducted in the Regions during this year. These will be patterned after the successful pilot course recently held in Cincinnati. The first will be held in the Southeastern Region on November 10, in Asheville, N.C. The WESTERN NORTH CAROLINA Chapter will be host. Another will be on the Westcoast during January, and the third in the North Central Region during March. All S.A.M members are eligible to participate in these Workshops regardless of location, and will be informed by separate announcements. Final details are being arranged during the N.T.L. summer session at Bethel, Maine, at which S.A.M will be represented by Chairman LUNKEN, President CARROLL, Vice President ZERFOSS, Executive Vice President BIXLER and Research Director FLYNN.

DISPLAY THE CANADIAN FLAG — All Chapters and members are urged to display the Canadian Flag along with that of the United States whenever deemed appropriate at meetings and other activities. This recommendation was unanimously adopted by the National Directors in view of the fact that S.A.M now has progressive chapters in Canada, and as another evidence of friendship between these two great countries.

MR. GORDON CAMPBELL of the MONTREAL Chapter, has been elected Vice President of the S.A.M Canadian Region. With representatives from the LONDON ONTARIO Chapter, they are planning a program of new chapter development and other regional activities for the Society in Canada.

S.A.M NATIONAL CONFERENCES IN NEW YORK CITY — Members should mark their calendar for the following series of S.A.M National Conferences, Workshops and Clinics planned for the new season, to be held in New York City at various locations, details of which will be presented through individual announcements. September 23 — Plant Layout Material Handling: October 14 — Workshop on Creativity; October 30-31 — Annual Management Conference: November 25 — Fundamentals of Problem Solving; December 9 — Leadership Skills for Executives; January 20 — Cost Reduction Workshop; February 17 — S.A.M Time-Study Rating Clinic; March 10 — Work Sampling Clinic; April 7 — Work Simplification; April 23-24 — Annual Spring Management Engineering Conference; May 12 — Management Development Seminar.

NEW S.A.M RESEARCH PUBLICATION — The Research Division announces the availability of the new pamphlet "Cost Control Through Electronic Data Processing", authored by PHIL CARROLL when he was 1st Vice President. This is another in the series of Modern Management Treatises being developed by the Management Research Division of the Society under the leadership of Dr. VINCENT A. FLYNN, Research Director. In the foreword of the publication AL N. SEARES, S.A.M Vice President says "All progress begins with measurement. This oft repeated truism, as applied to scientific management, has taken on great significance with the advent of electronic data processing systems. This monograph sets forth some of the bench marks that must be considered to materialize the inter-relationship of the measurable data that contribute to sound management decisions."

"PROGRESSIVE MANAGEMENT" — Chapter Officers and members everywhere will find useful the new S.A.M pamphlet, now available, titled "Progressive Management". It contains principles, ideas and techniques expressed by HOMER E. LUNKEN as National President of the Society, and as Vice President and Director, The Lunkenheimer Company, Cincinnati, Ohio. The publication has been developed in line with the great interest shown in his editorials in "Advanced Management" during the last year. These are based upon his many official Society activities and his broad experiences as an officer of a leading industrial company. Also represented in point of view, is his work with various civic, professional, educational and community organizations. The material is helpful for reference and inclusion in Chapter newsletters, news releases, articles and speeches, membership promotion, and in general public relations, among other applications. Copies are available to members at no charge.

U.S. MAIL IMPROVEMENT PROGRAM — S.A.M urges each member to cooperate with the United States Post Office in the current postal education and mail improvement program. They say Mark Twain once remarked, "people talk about the weather, but do nothing about it . . . Obviously they can't." People also talk about the slow process of the U.S. Mail and think they can do nothing about it. But they can! And here's how:

Zoning of Mail — Many cities in the United States use postal zone numbers as part of their address. The use of these numbers accelerates and simplifies the processing of mail, makes it easier for the less experienced clerk to distribute the mail, and effects earlier dispatch and delivery of your mail. For this reason, it is important that you use zone numbers wherever applicable. Learn your own zone number and use it on your **return** address. Obtain the zone numbers of customers and clients, and include them on all correspondence. Your local post office will be glad to furnish you with any information concerning postal zones.

Mailing Early In The Day — At present approximately 80% of the mail is received in the post office between the hours of 6 and 10 p.m., creating a tremendous peak period problem. To process this tremendous volume of mail, the post office has to schedule 75% to 80% of its employees on night duty. Since night workers are paid a 10% differential, postal costs are increased. In addition, because of the larger proportion of night work, the post office is faced with a recruitment problem as potential employees are attracted to jobs with more desirable working hours.

Early mailing would cut postal costs and stretch your tax dollar. Moreover, the reduction of night work would enable more postal employees to spend evenings at home with their families.

The simple fact is that by mailing earlier in the day the peak load would be spread out, enabling the post office to place a larger amount of mail on earlier planes and trains and thus assure earlier delivery at point of destination.

Mail communication is the lifeline of every business, small or large; and preparing and dispatching your daily mail is a major phase of business operation and deserving of top-level attention.

The U.S. Post Office is conducting an educational campaign designed to speed up the processing and delivery of your mail — SO, IN ORDER TO HELP **US** GIVE **YOU** BETTER MAIL SERVICE — THE KIND YOU DESERVE — USE ZONE NUMBERS AND MAIL EARLY IN THE DAY. IT'S THE FASTER AND MORE ECONOMICAL WAY!

CHAPTER CHIPS — WASHINGTON Chapter and all S.A.M is proud of the honor to EWAN CLAGUE as one of ten outstanding employees of the Federal Government who, each year, receive a Career Service Award presented by the National Civil Service League. Mr. Clague is Commissioner of Labor Statistics, U.S. De-

partment of Labor, and has long been a leading S.A.M member . . . ORANGE COAST Chapter in Long Beach California, in co-sponsorship with the Long Beach Chamber of Commerce, conducted a most successful Management Development Conference For Small Business, with over 200 in attendance. Write JOSEPH W. WINKLER for copy of program and other details . . . HARTFORD Chapter features a "Package Plan" of ten monthly meetings, two conferences, four seminars, one discussion group for sale to industry and business at a bargain price of $125. This is about $50 less than combined individual prices for the meetings, and has been a great financial success for the Chapter. Write JOHN S. DES JARDINS for details . . . CLEVELAND Chapter has earned area prominence for its participation in Junior Achievement Activities. Top Management Awards are presented by the Chapter each year to several individual Junior Achievement Companies. JOHNATHAN L. COLLENS will be glad to give you the details.

FOREIGN POSITIONS AVAILABLE — S.A.M members interested in obtaining additional foreign experience will want the latest available information regarding positions announced by the United Nations Technical Assistance Program. They are in the fields of Economic Surveys, Industrial Development and Productivity, Natural Resources Development and Power, Public Finance, Statistics, Transport and Communications, Social Development, Housing, Physical Planning and Building, Community Development, Social Services, and Public Administration. Positions are located in a large variety of countries abroad particularly in Asia, Africa and South America. For details write to Technical Assistance Administration and Recruitment Services, United Nations, New York City 17, N. Y.

S.A.M members are invited to attend the International Course on "Materials Handling and Management", to be conducted September 29th through October 10th, in Delft, The Netherlands. It will be conducted in the English language under the patronage of the European Productivity Agency. Contact Research Institute for Management Science, 76, Nieuwe Laan, Delft, The Netherlands.

NATIONAL OFFICE MAILINGS — All 900 Chapter and National Officers are reminded to check their particular interest in the following combined mailings sent Chapter Presidents and National Directors since the last listings. Please broadcast the particular information they contain in line with their specific purposes. Statement of Basic S.A.M Objective — For Long Range Planning; Four publications as Chapter Aids for program planning, 1. Directory of Management Seminars, 2. Administrative Guide to Seminar Operations, 3. Chapter Program Aids — List of Special Activities, 4. Conference Manual; Minutes Board of Directors Meeting, April 26; Registration Form New-Chapter Officers; Progress Report on Regionalization by the Chapters; Chapter Committee Organization; "Speaker Courtesy"; Management Seminars and Workshops; "Progressive Management"—Principles, Ideas and Techniques; Membership Report by Grades and Chapters; Chapter Performance Awards Report; Small Business Administration Publication, "How Big Companies Help Small Marketers"; Material Handling Education Newsletter.

PARKINSON'S LAW—For those who have not yet had a chance to read it, President-elect PHIL CARROLL highly recommends as both interesting and useful the book "Parkinson's Law—and Other Studies in Administration". The so-called Professor Parkinson is the one who recently made the remarkable "discovery" that in any organization the number of subordinates multiples at a predeterminable annual rate regardless of the amount of work the staff actually turns out. A reading of the book by business executives will provide much fun and some concern about its contents, which include: "Parkinson's Law", or "The Rising Pyramid"; "The Will of the People", or "Annual General Meeting"; "High Finance", or "The Point of Vanishing Interest"; "Directors and Councils", or "Coefficient of Inefficiency"; "The Short List", or "Principles of Selection"; "Plans and Plant", or "The Administration Block"; "Personality Screen", or "The Cocktail Formula"; "Injelititis", or "Palsied Paralysis"; "Palm Thatch To Packard", or "A Formula For Success"; "Pension Point", or "The Age of Retirement". As an example, Parkinson's book says: "Work expands so as to fill the time available for its completion. General recognition of this fact is shown in the proverbial phrase "It is the busiest man who has time to spare." Thus, an elderly lady of leisure can spend the entire day in writing and dispatching a postcard to her niece at Bognor Regis. An hour will be spent in finding the postcard, another in hunting for spectacles, half an hour in a search for the address, an hour and a quarter in composition, and twenty minutes in deciding whether or not to take an umbrella when going to the mailbox in the next street. The total effort that would occupy a busy man for three minutes all told may in this fashion leave another person prostrate after a day of doubt, anxiety, and toil.

"Granted that work (and especially paperwork) is thus elastic in its demands on time, it is manifest that there need be little or no relationship between the work to be done and the size of the staff to which it may be assigned. A lack of real activity does not, of necessity, result in leisure. A lack of occupation is not necessarily revealed by a manifest idleness. The thing to be done swells in importance and complexity in a direct ratio with the time to be spent. This fact is widely recognized, but less attention has been paid to its wider implications." The book is published by Houghton Mifflin Company, Boston. ■

Repeating S.A.M – N.T.L Workshop In Leadership Skills

THROUGH special arrangement with the National Training Laboratories, S.A.M is presenting a five-day Workshop in Leadership Skills. The Workshop is a condensed version of the three week course N.T.L gives each year at Bethel, Maine. A pilot Workshop held last April in Cincinnati was so outstandingly successful that a "repeat performance" has been scheduled for November 10-14, at the Treadway Manor in Asheville, N. C.

The "faculty" is composed of members of National Training Laboratories, an organization of social scientists from a number of our great universities who have formed N.T.L to pool their knowledge and coordinate research activities. One instructor is assigned to every twelve to fifteen participants, and total registration is limited to sixty. Registration, including tuition and all Workshop materials, is $200; room and meals are extra.

The S.A.M-N.T.L Workshop is unique in that participants learn from actual involvement rather than merely by listening to the speaker and asking questions. Included are General Sessions, Diagnostic Group Discussions, Case History Analyses, and Skill Practice Sessions on Leadership. The subject matter, which comes under the heading of "behavorial science," covers such areas as:

Ways Of Looking At Organizational Effectiveness
Production And Morale In Organizations
Setting Group Standards
Testing Assumptions About People
Meeting Organizational Change
How To Improve Communications
Concepts Of Leadership For Today's Management
Dimensions Of Group Growth
How To Make Better Use Of Available Human Resources
How To Tighten Decision-Making

The Workshop is intended for experienced managers from the upper and middle levels of management — Presidents, Executive Vice Presidents, Division Managers, Departmental Managers, Plant Superintendents, etc. It is considered desirable for companies to select at least two participants, preferably representing both line and staff functions.

Registrations must be received at S.A.M Headquarters no later than November 1st, and will be accepted in order of receipt.

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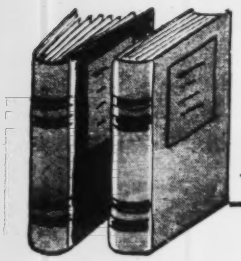

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A-29 A PHILOSOPHY OF ADMINISTRATION—Marshall E. Dimock. 171 pp. Harper. 1958. $5.00.
A classic statement of the basic rationale of sound administration. Written by an eminent professor and practitioner of public administration, the book has relevance to the problems of all executives, both in government and in business. Defines the challenge of executive work in philosophical and ethical terms and provides a constructive frame of reference for management to serve the deepest needs and aspirations of each individual in the organization. A very wise and at the same time a very practical book.

A-30 LONG-RANGE PLANNING FOR MANAGEMENT—David W Ewing, Editor. 489 pp. Harper. 1958. $6.50.
Addressed to top management, this book details the best current thinking on methods and problems of forward planning for management. Drawn from the **Harvard Business Review** and other authoritative sources, the chapters of the book analyze a series of long-range planning problems and suggest ways of coping with them. Covers general approaches, organization, techniques, special problems, and limitations in company planning.

A-31 IMPROVING MANAGERIAL PERFORMANCE—Virgil K. Rowland. 163 pp. Harper. 1958. $3.50.
A leading consultant on personnel problems outlines a tested system for management appraisal of performance on the job. Designed to help the individual understand fully what is expected of him and to help the company channel training and executive development programs into the most rewarding areas.

A-32 THE MAN IN MANAGEMENT — Lynde C. Steckle. 140 pp. Harper. 1958. $4.00.
Subtitled "A Manual for Managers", this brief but valuable book puts the human side of management into a broad perspective of biological, social, psychological and historical understanding. Written by an experienced management consultant and aimed at the supervisor at any level. Describes and explains seven key tools of effective supervision—controlling, listening, explaining, appreciating, encouraging, criticizing, and considering the other person.

MANAGEMENT TOOLS AND TECHNIQUES

B-64 BUSINESS COMMUNICATION READER — J. Harold Janis, editor. 364 pp. Harper. 1958. $6.00.
A careful selection of outstanding short writings on all aspects of business communication. Selected articles cover preparation for business leadership; development of communication skills; mass communications; management and human relations; the art of exposition; and various other relevant subjects. The readings are interesting both in their subject matter and as illustrations in themselves of effective communication of business ideas. Authors of the short pieces range from Adam Smith to Crawford H. Greenewalt, with a wide range in between.

B-65 MOTION AND TIME STUDY — Benjamin W. Niebel. 506 pp. Irwin. 1958. $8.70.
A revised edition of one of the best known works in an important field of industrial engineering. Emphasizes latest developments in approaches and techniques.

B-66 MENTAL HEALTH IN INDUSTRY—Alan A. McLean, M.D. and Graham C. Taylor, M.D., 287 pp. McGraw-Hill. 1958. $6.50.
An up-to-date introduction to problems of industrial psychology. Covers the motivations which affect human behavior in work situations, placement of people in terms of their psychological strengths and weaknesses, and ways of recognizing and dealing with psychological problems in the office or factory.

B-67 MANAGEMENT AND ORGANIZATION.—Lewis A. Allen. 364 pp. McGraw-Hill. 1958. $7.00.
A broad-gauged consideration of the elements in sound business organization and their relationship to effective management. Gives specific guidance on both principles and practice of carrying out organizational changes and analyzing the efficacy of existing organization in terms of its suitability to its purpose.

B-68 BUSINESS PLANNING FOR ECONOMIC STABILITY—Henry Thomassen. 64 pp. Public Affairs Press. 1958. $2.00.
A penetrating summary of the things individual businesses can do to help achieve national economic stabilization during down-swings in the business cycle. Covers pro and cons of such widely discussed problems as the guaranteed annual wage, pricing policy and production policy in a recession and other currently relevant topics.

B-69 SALES AND ENGINEERING REPRESENTATION —Lee O. Thayer and George E. Harris. 225 pp. McGraw-Hill. 1958. $6.00.
A professor of business administration and an experienced engineering sales manager team up to give practical guidance on ways of improving techniques and methods of representation on technical products. This is one of the first systematic coverages of a field of increasing concern to many managements who find that their products and production are in good shape but that they are losing markets because of inadequate sales and service operations.

B-70 ACCELERATED AMORTIZATION — David A. Thomas. 111 pp. University of Michigan School of Business. 1958. $5.00.
A thorough analysis of present tax laws relating to rapid amortization and the administrative application of this device in various business situations.

PERSONAL DEVELOPMENT

C-19 HOW TO TURN FAILURE INTO SUCCESS—Harold M. Sherman. 258 pp. Prentice-Hall. 1958. $4.95.
Sooner or later everyone falls on his face in some important assignment and feels that he is a failure. This book gives practical advice on how to benefit from such errors and how to restore self confidence.

C-20 HOW TO WRITE SCIENTIFIC AND TECHNICAL PAPERS—Sam F. Trelease. 185 pp. Williams & Wilkins. 1958. $3.25.
A useful guide to ways and means of making scientific and technical papers readable and understandable.

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C-22 **SPEAKING FOR RESULTS—Ralph A. Micken.** 222 pp. Houghton. 1958. $2.75.
A guide for business and professional speakers covering the elements of speech making. Covers speech preparation, delivery, language and ways and means of analyzing audience and tuning a speech for maximum effectiveness.

THE WIDER VIEW

C-27 **THE AFFLUENT SOCIETY—John K. Galbraith.** 368 pp. Houghton. 1958. $5.00.
A challenging new viewpoint on our economy and what makes it tick. Written by a distinguished economist in highly readable style, this book questions the basic applicability to present circumstances of the fundamental concept that increasing production is always a good thing. While most readers will want to argue with the book as they read it, this, after all, is the best evidence of its thought-provoking character.

C-28 **FOREIGN POLICY: THE NEXT PHASE—Thomas K. Finletter.** 208 pp. Harper. 1958. $3.50.
A well-reasoned and well-written program for a more dynamic approach to world problems. By a former Secretary of the Air Force with wide experience in international affairs. Covers the military, economic and political dimensions of necessary actions by the U.S. and the rest of the free world in the face of the growing danger from Russian expansionism.

C-29 **FORGING A NEW SWORD—William R. Kintner and others.** 238 pp. Harper. 1958. $4.50.
A hard look at the Pentagon and its organization and problems. Particularly timely in view of the controversy over the President's reorganization plan. Reviews the ten-year history of the Department of Defense and makes specific suggestions for improvement.

C-30 **SCIENCE AND HUMAN VALUES—J. Bronowski.** Messner. 1958. $3.00.
A profound examination of the fundamental question of whether civilization can survive in the face of the startling developments of science on the military front. Responsible reviewers have called it "**the** book our morally confused world has been waiting for", and . . . "a great and courageous statement. . . ."

C-31 **THE DYNAMICS OF PLANNED CHANGE—Ronald Lippitt and others.** 312 pp. Harcourt. 1958. $6.00.
A full review of the new knowledge of how change is brought about in organized groups. Based on the research of a number of students of group dynamics. This book gives valuable guidance to understanding any organization or group.

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RATES: Classified insertions billed at $1.50 a line per issue. Lines average 30 characters. Boldface heading counts as two lines. There are 7 lines to an inch. Minimum insertion charge on five-line basis. Display ads at a minimum of 1½ inches. Copy required not later than the 12th of month preceding publication date. Answers to box number ads should be addressed to given box number, care of ADVANCED MANAGEMENT, 74 Fifth Ave., New York 11, N. Y.